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ABSTRACT

The cooperative education planning study provides an overview and initial analysis of the varied postsecondary cooperative education goals and realities and identifies key issues and indicators of program success to be considered in evaluation cooperative education programs. The study involved several data sources and approaches, including: (1) a literature review; (2) a review of Federally finded 1973-74, cooperative education program proposals; and (3) a detailed examination of eight cooperative education school programs. Data were gathered through: (1) interviews with program coordinators, faculty, students, and staff, (2) a mail survey of current and past students, and (3) telephone interviews with past and present employers of cooperative education students. The eight sample schools (University of Detroit, the University of the Pacific, Pratt Institute, Pasadena City College, Alice Lloyd College, Lees Junior College, Texas Southern University, and Washington Technical Institute) were selected for their diversity in type of institution, student body characteristics, geography, and mode of program operation. The remainder of the document discusses findings in the areas of defining cooperative education, program goals, differing perspectives, major programmatic issues, indicators of program success, and a summary of the study's implications. (BP)

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FINAL REPORT

COOPERATIVE EDUCATION PLANNING STUDY

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EXECUTIVE SUMMARY

Background and Methodology

Cooperative education involves an integrated mixture of classroom and practical work experience. It is a concept broad enough to include a wide variety of program components, which prohibits anything more than the most skeletal definition.

Initiated in the School of Engineering of the University of Cincinnati in 1906, cooperative education has expanded to include many disciplines and hundreds of schools. In 1974, 371 institutions received $10,750,000 in Title IV-D federal grants. At its best, cooperative education represents a three-way partnership among students seeking study-related work experience, employers providing coop jobs for students, and educational institutions committed to supplying both the academic interface and the administrative support necessary for the student-employer matching effort.

Cooperative education is believed to offer many benefits, including:

- An increase in educational opportunities for students from low-income families;
- Career education and preparation, including exposure to the world of work;
- Exposure of students to a diversity of work experiences related to the students' academic field, and thus aid in career selection; and

- Help in opening doors to jobs previously not available to minorities and women, and thus increase their career opportunities.

The current study was designed to provide an overview and initial analysis of the varied cooperative education goals and realities, and to identify key issues and indicators of program success which should be considered in the evaluation of cooperative education programs. The study involved several data sources and approaches, including:

- Review of the literature,
- Review of cooperative education program proposals federally-funded in FY 1973-74,
- Site visits to eight cooperative education schools and interviews with program coordinators, faculty members, students, and staff,
- A mail survey of current and past students of the eight schools, including both cooperative education and non-participating students,
- Telephone interviews with past and present employers of cooperative education students at each of the eight schools.

The eight sample schools were selected for their diversity in type of institution, characteristics of the student body, geography, and mode of program operation. The schools selected were:

The University of Detroit, a private, Jesuit Institution in Detroit's inner city. Most (71 percent) of the schools' coop students are enrolled in the engineering school; other significant sources of coop students are accounting, architecture, business administration, and social science.

The University of the Pacific, a private, coeducational institution, located in Stockton, within one of California's major agricultural regions. Tuition of $3,000 per year is especially high in a state which has a well-developed system of publicly supported higher education, and roughly half of UOP's students come from families with annual incomes of less than $7,500. Cooperative education is therefore an important means of making UOP "affordable."

Pratt Institute, a private, coeducational university located near New York City's Bedford-Stuyvesant section, originally founded as a vocationally-oriented training institute for artists and technicians. Only about ten percent of the student body are from minority groups. Because Pratt's tuition is $2,200, in a city where a university network (the City University) provides low-cost higher education, the role of income derived from coop jobs in offsetting this tuition differential is important.

Pasadena City College, a public four-year college serving six unified school districts in the Pasadena Area Community College District of California. The student body includes about 10 percent black students and seven percent students with Spanish surnames. The cooperative education program, which was predated by a workstudy program, is dominated by social science majors.

Alice Lloyd College, a private, two-year liberal arts college located in the Appalachian mountains of Kentucky. The student body is primarily white and from lower-income families. Located in a poor job market, Alice Lloyd has emphasized jobs in social service areas for its coop students; it was once part of a six school cooperative education consortium.

Lees Junior College, a private, two-year institution in Jackson, Kentucky, with a student body similar to that of Alice Lloyd (i.e., primarily white and from poverty-level families). Lees Junior College was also once part of the six-school consortium for cooperative education. When it was disbanded soon after formation, Lees continued its program independently. Coop jobs emphasize the social services.

Texas Southern University, a state-supported, coeducational institution located in a Houston Model Cities neighborhood. With about 70 percent of its students from low-income families, the need for employment during enrollment is widespread. The most common major among coop students is drafting and design, and the curriculum of this discipline has been modified in response to the coop work experience.

Washington Technical Institute, an urban land-grant college located in the District of Columbia which admitted its first students in 1968. Its stated goal is to become a model inner-city technical school.

Virtually all the students are minority group members; coop students are most often enrolled in the departments of business, police science, engineering, public service, education, technology and recreation.

Findings and Implications

Cooperative education as perceived, planned, and operationalized by different individuals and institutions has no single or consistent structure, purpose, philosophy, or objectives. The study indicated the existence of several different although sometimes interrelated cooperative education purposes, goals, and priorities, including:

- Providing opportunities for career exploration by students,
- Providing students with technical skills and experience through specific career-related coop assignments,
- Giving students an introduction to the work world and some practical "human relations" training;
- Giving students from low-income families an opportunity to attend college due to partially covering costs through coop job earnings;
- Providing a means for schools to offset tuition differentials and thereby compete for students with less expensive schools;
- Providing additional opportunities for minority and women students through using coop assignments to break down traditional barriers.

While schools often espouse several of these goals or purposes, the relative importance placed on different purposes helps to determine the structure and components of a single school's cooperative education program. In some cases schools adopt goals which are sometimes in conflict, and this can result in operational confusion, particularly where priorities are unclear. For example, a school may adopt as a goal the provision of career exploration opportunities -- which implies permitting students to try several different kinds of coop assignments -- and providing technical job skills -- which implies having students return to the same coop job repeatedly to gain such skills.

It appears that many schools initiate cooperative education programs without going beyond the widely accepted general concept to consider the specific implications of different priorities. Thus they may not be aware of potential conflicts or of the specific policy and programmatic decisions facing them, and the probable effects of different decisions upon program operations and impact.

Based on the present study, it appears that every cooperative education program must make certain policy and procedural decisions in order to function, although these decisions may be reached consciously and related to stated goals and priorities, or they may be made almost unconsciously, in an effort to get a program started. The nature of these interrelated decisions has major implications for the structure, components, and impacts of a cooperative education program. Among these key decision areas are the following:

- Academic majors to be included in the program. Programs may be limited to students in technical fields such as accounting, engineering, business, and architecture, or liberal arts majors may be eligible.

- Relative emphasis on career exploration versus gaining of specific, technical job experience. Where programs include liberal arts majors, students may be primarily concerned with career exploration. Students in technical fields seem more likely to be concerned with developing technical job skills -- and perhaps becoming full-time employees.

- Concern with pay scales for coop jobs. Where these jobs make college possible for students from low-income families, level of pay -- and minimizing of travel and subsistence costs for jobs not adjacent to campus -- becomes very important. Where coop experience is the key objective, pay levels may be of less importance.

- Question of academic credit for coop experience. Coop programs may be particularly popular where academic credit towards graduation is awarded for coop experience. The question of transferability of credit is also a concern. Faculty may be wary of awarding credit unless there is some means of evaluating student performance and determining the academic relevance of the coop job. The nature and extent of classroom-job interface becomes an issue.

- Issues of student selection criteria. Coop programs can become "dumping grounds" for poorly qualified students or allow for "creaming" of the best qualified students. Selection criteria affect potential program impact in terms of career exploration, a source of income, and technical preparation for employment.

- Determination of program scheduling. Coop education programs may be mandatory or elective. Moreover, although Title IV-D clearly refers to "alternate" programming -- alternating periods of full-time study and full-time work assignments -- some programs remain "parallel," providing for simulaneous part-time study and part-time work assignments.

- Administrative issues. The location of a program within the institutional structure may affect its support from faculty, particularly with regard to academic credit for work experience. Where coop programs are part of academic affairs offices, faculty support seems greatest.

- Question of charging tuition for work assignments. If tuition is not charged for this period, schools may find it difficult to provide desirable faculty and staff oversight of the program. Yet such costs may burden low-income students and seem justified only if work assignments are related to student's academic work.

Decisions in these key areas, together with program goals and priorities, shape each individual program. If key decisions are not consistent with agreed-upon program goals and priorities, programs may find it difficult to meet their own goals.

Information from a variety of study data sources indicate that one major concern affects all the other cooperative education issues, and provides perhaps the major challenge to schools attempting to run successful cooperative education programs. This key issue is the necessity for balancing the differing and sometimes conflicting goals and priorities of the various cooperative-education program participants: students, faculty, staff, and employers.

- Employers often are looking for future permanent employees and individuals with enough job knowledge to be valuable staff. Thus they typically favor having the same student return each work period throughout coop program participation. This is particularly true in the more technical fields.

- Faculty are concerned with protecting the quality of a degree, and may be skeptical of coop jobs unless they are closely related to academic work. Moreover, they often question whether and under what conditions academic credit toward graduation should be awarded for coop experience. Technical field faculty may prefer students' repeated coop assignment to the same employer as being especially career-relevant.

- Students may view coop experience as a chance for career exploration, a means of helping to finance a college education, a way of finding a future employer, an easy way to get academic credit -- or a combination of these. Depending upon their priorities, they may favor or oppose repeated assignment to the same employer, and may look for different kinds of coop job opportunities.

- Cooperative education staff must attempt to balance employer, faculty, and student desires and to reconcile them with Federal requirements and the stated policies and priorities of the institution. They must satisfy employers in order to maintain needed coop openings, keep faculty support if credit is to be provided and academic interface maintained, and meet student demands to assure participation at full capacity. Moreover, they are responsible for operating a "successful" program based on local goals and objectives.

This overview study clearly indicates the vital importance of the balancing of disparate priorities and demands in the development and maintenance of a successful cooperative education program, whatever its individual goals and objectives. The other issues identified provide a basis for the analysis of existing cooperative education programs -- and for the development of evaluative models which can measure program success in meeting individual goals. However, the program and philosophical diversity in present cooperative education efforts indicates that no single set of "performance" or "success" criteria can be established for such programs. Instead, it is necessary first to establish an individual program's purposes and priorities, and then to evaluate its success in terms of:

- the consistency of its policies and procedures with its stated goals and priorities, and
- the extent to which its stated goals are being met.

Based on the limited sample of cooperative education schools in this study, it appears that the term "cooperative education" is a broad concept with many different "operational definitions." There appears to be no universal unifying or guiding principle -- beyond that of meshing classroom and work experience in postsecondary education -- which could serve as a single foundation for program evaluation. However, a broader study with a large school sample might successfully identify and describe a series of cooperative education program models which could serve as organizing factors in program evaluation. Such models might also prove extremely valuable as guides to schools planning cooperative education programs, helping them to identify key decision points and issues.

1.0 PURPOSE AND METHODOLOGY

1.1 Background of the Study

Unfortunately for policy makers in institutions of higher learning throughout the nation, as well as in state and federal government positions, a commonly accepted definition of a concept as complex and dynamic as cooperative education is hard to find. Certainly everyone would agree that cooperative education involves some mixture of classroom and practical work experience. Most definitions also prescribe that these two kinds of experiences be "integrated", each designed to make the other more meaningful, each therefore better able to contribute to the growth and development of the individual student. Beyond these bare details come a myriad of questions concerning such issues as parallel versus alternate scheduling, the relationship of work positions to a student's major field of study, the role work should play when it comes to degree requirements, etc. As the cooperative education movement has grown to proportions it would have been difficult to foresee at its inception almost 70 years ago, the concept of cooperative education has evolved, and any definition hoping to encompass the hundreds of programs now in operation must stretch to include the widest imaginable range of details. A good general -- and therefore, of necessity skeletal -- definition of cooperative education is offered by Charles F. Seaverns, Jr. of Northeastern University:

Cooperative education is a unique educational process designed to enhance optimum individual adjustment toward self-realization and career development by means of integrating classroom study with planned and supervised practical experience in vocational, educational, or cultural activities outside of the formal classroom environment.

Cooperative education, at its best, represents a three-way partnership between students desiring study-relevant work experience, employers willing to provide meaningful student jobs for future members of the work force, and educational institutions committed to supplying academic interface and administrative support for the student-employer matching effort.

Cooperative education was introduced in the United States in 1906 by Herman Schneider, then faculty member, and later dean, of the School of Engineering at the University of Cincinnati. Schneider believed "work makes the spirit of the man." Although cooperative education began its spread to other schools almost immediately after its inception at Cincinnati, its expansion was slow, though steady, until the early 1960's when a combination of forces contributed to produce an unprecedented sprint in growth.

During the sixties, cooperative education received the endorsement of two prestigious educational commissions, as well as the seal of approval of Harvard University, which introduced its own cooperative education program. But much more importantly, education, as an institution, along with so many other institutions, found itself subjected in the last decade to a deep and searching re-examination of its goals and objectives, as well as its role in society. Students have come to demand relevance in higher education. At the same time, inflation, translated into rapidly escalating tuition and other education costs, combined with a shrinking job market, has served to shift the emphasis from general learning to career preparation. Meaningful employment -- during, as well as after college -- has become a major concern. In addition, education institutions are recognizing -- with the help of the federal government's various equal opportunity regulations -- their responsibility to open their doors to traditionally excluded groups such as ethnic minorities, the economically-disadvantaded, and women.

Cooperative education also received a boost in 1968 when the U.S. Congress authorized the expenditure of federal funds for cooperative education. Title IV-D of the Higher Education Act of 1965 was amended to authorize grants of up to $75,000 to colleges and universities "for the planning, establishment, expansion or carrying out by such institutions of programs of cooperative education that alternate periods of full-time public and private employment." By 1974, the number of institutions receiving grants for such programs increased to 371; the amount of money granted was $10,750,000. In 1973, cooperative education programs enrolled 140,000 students who earned an average of $2,500, or a total of $350 million.

For the students, employers, and educational personnel involved with cooperative education programs, the goals and expected benefits of participation are many and varied. Each of the three partners in the cooperative education venture, of course, bring their own perspectives and needs to the development and continuing operation of individual programs . However, the traditional rationale for a cooperative education program is framed in terms of four expected program effects:

- Cooperative education programs increase educational opportunities for students from low-income families;
- Cooperative education programs provide career education and preparation, including exposure to the world of work;
- Cooperative education programs expose students to a diversity of work experiences related to the students' academic field, and thus aid in career selection; and
- Cooperative education programs help open doors to jobs previously not available to minorities and women, and thus increase their career opportunities.

1.2 Purpose of the Study

The purpose of the study was exploratory in nature; although, in fact, a small number of schools were to be visited and their cooperative education programs to be examined, no formal evaluation of them -- or of the concept of cooperative education, in general -- was to be performed. Rather, the data from these site visits would be combined with data from several other sources to provide the material required for a broad understanding, and an initial, rudimentary analysis of the goals of cooperative education and their relation to the realities of operating programs.

The RFP, which generated this study, listed three questions of primary concern:

1. To what extent are these goals realistic?
2. To what degree are they achieved in practice?
3. To what extent are they competitive with one another and what are the trade-off choices among goals which must be made in designing a cooperative education program?

The RFP saw cooperative education as a program with three interdependent constituencies -- students, institutions, and employers -- and it was decided to structure the study around this breakdown.

CONSAD viewed the three questions posed in the RFP as guideposts to action. In order to answer these questions, a number of issues central to the development and continuing operation of cooperative education programs would have to be examined in depth. Virtually every activity undertaken in a well-run program contributes in some way to the attainments of goals. It would be essential, therefor, to design a research plan sufficiently inclusive to look at the issue of goals and objectives with all their ramifications. In its proposal in response to the RFP, CONSAD set down these central objectives for the study:

- a careful description and analysis of a number of cooperative education programs from the vantage point of their origins and trajectories, the organization subsystems operative (students, colleges, community and employers), and the implied and explicit assumptions about program functioning and goals;

- an assessment of the extent to which the postulated goals, for students, colleges and employers are realizable;

- an understanding of the criteria which guide the development of cooperative education programs, and of the manner in which these criteria enter into choices among alternative approaches; and

- insight into the contextual issues of cooperative education programs, including opportunities which might be foregone in favor of cooperative education and the possible consequences of the resulting trade-offs.

The study was designed to provide an appreciation of the diversity of goals and programs connected with the concept of cooperative education and would identify key issues raised by the attempt to translate goals into working programs.

1.3 Methodology and Limitations

Project methodology consisted of five basic components:

- a review of the literature;

- a review of cooperative education program proposals federally-funded for FY 1973-74 on file with the Office of Education;

- site visits to eight colleges and universities with operating cooperative education programs;

- mail surveys of students and graduates, both coop participants and non-participants, from each of the eight schools; and
- a series of telephone interviews with employers, both past and present, of coop participants.

The literature review and review of Office of Education files began simultaneously immediately after contract award. However, the literature review was seen as an on-going process to continue throughout the length of the contract period, unlike the review of Office of Education files which, of course, would be completed in a relatively short period of time. Both reviews were undertaken in order to further acquaint the project staff with the diversity of cooperative education programs currently operating throughout the country, as well as the major issues most commonly associated with them. Of course, one of the issues which received a great deal of attention during the review was the issue of goals and objectives for cooperative education programs. The reviews helped bring into sharper focus some still vague research concerns, enabling the project team to begin formulating specific questions which could be addressed later on.

The literature review entailed commissioning searches of ERIC and the New York Times Index. A bibliography of holdings of the Cooperative Education Information Clearinghouse was also obtained. In addition, a member of the project team hand searched the Congressional Information Service, Dissertation Abstracts, and the Educational Index. Contents of the Journal of Cooperative Education were reviewed in Washington at the library of the National Education Association.

Six-hundred proposals federally-funded in FY 1973-74 on file with the Office of Education were examined. Proposals from schools participating in 22 different consortia were separated from the others, leaving a total of 324 proposals from schools not participating in consortia. Data from these 324 proposals were tabulated to provide a broad overview of the proposals, the schools from which they emanated and the programs with which they dealt. Although federal funding was not to be a requirement for a school to be selected for a site visit, the review of federally-funded program proposals was utilized to draw up a kind of informal matrix to include all the broad categories into which the various programs could be fitted. This matrix was then used to help guide the selection of schools for site visits.

In fact, all schools selected for site visits were recipients of Title IV-D funds, and were, therefore, included in the Office of Education files. In consultation with appropriate OE personnel and other outside experts, the schools were selected to include both public and private institutions; community colleges, as well as universities with undergraduate and graduate components; institutions located in each of the major geographical divisions of the country, as well as institutions in both rural and urban settings; institutions serving varying student bodies in terms of their socioeconomic backgrounds; institutions with coop programs for various kinds of students in terms of major fields of study; and institutions with coop programs both newly initiated and firmly established over many years. An important consideration in the selection of schools was the feeling that each offered the opportunity for fresh insights and an interesting perspective in regards to cooperative education. For this reason, better known schools, i.e., institutions long recognized for their enthusiastic participation in the coop education movement like Northeastern and Antioch Universities, were avoided. Schools which had received attention as a result of some previous study were also avoided in an effort to prevent duplication of effort. The literature review was, of course, helpful in regards to identifying these schools, as was consultation with other researchers.

It was decided to conduct site visits, in addition to the gathering of information through the mail and over the telephone, in order to glean the extra information and impressions possible only in a face-to-face situation. From a practical point of view, it was also felt that on-site interviews were less likely to result in refusal of information than telephone interviews. Interviews were originally planned with cooperative education and non-cooperative education faculty members, current and past employees, cooperative education students, and the director of the cooperative education program. Rather detailed interview instruments were developed to be used in each interview stituation. The Director of the coop program was to be asked to schedule interviews prior to each site visit. In addition, the project team was to select the sample of students and graduates to be included in a later mail survey on site. It was anticipated each site visit would require two days and be conducted by two team members.

These assumptions, along with the interview instruments, were pre-tested during a site visit to the University of South Florida at Tampa. The proposed questionnaire to be utilized in the mail survey was also tested on-site at Tampa. As a result of the pre-test, several important modifications in the research logic were made. The biggest change related to the decision to use general interview guidelines rather than the formalized interview instruments. It was originally anticipated that specific and structured instruments would be required to assure consistency of notation by the respondents. However, once in the field, it was obvious that this procedure inhibited the attainment of large segments of important data. Respondents often embarked upon individual trains of thought which the interviewers recognized as useful but for which there was no allowance for recording on the interview instruments. Soon, many additional pages were filled with the resultant yield being short, non-detailed answers to questions. It was concluded that a less formal interview structure was needed which would encompass open-ended questions or "probes."

Nine areas were identified as potential areas which all field teams should probe during subsequent site visits. These included:

- factors which led to the successful initiation of a coop program;
- original versus current intent of the program;
- the scheduling modality used by the institution;
- the future plans for coop;
- opinions about the sufficiency of current levels of funding of the coop program;
- the coordination of the coop program with other programs such as work study programs;
- the status of the coop administrator vis-a-vis other institutional personnel;
- the practices of employers in regards to hiring coop students after graduation; and
- the geographic distribution of employers of coop students along with questions raised as a result of the literature review.

These probes were then incorporated into guidelines developed for each category of respondent. For example, the guidelines prepared for interviews with program coordinators included the following components:

- program development;
- a comparison of initial plans and current program;
- present operation of the program;
- perspectives on program and students;

- skills for the role of the coordinator; and
- future plans.

Other guidelines followed the same basic format, with one or two components added or deleted according to the unique viewpoint of each category of respondent. The purpose of the probes and the guidelines developed from them was to enable the project team to identify initial goals and objectives and determine how well the current operation of the various programs followed the dictates inherent in the goals and objectives.

Another important change involved broadening the base of the interview categories to include not only faculty, but administrators and other staff also. These people were to include the president of the school, deans, coop staff in addition to the director, financial aid office staff and other appropriate staff. It was also discovered that at many schools it might be impossible to classify faculty as either cooperative education faculty or non-cooperative education faculty. Programs, especially institution-wide programs, are often administered by a coop program staff alone, with no faculty directly participating in any way. It was decided to seek out cooperative education and non-cooperative education faculty whenever possible, but whenever impossible, to find faculty who both support and do not support cooperative education instead.

It was also decided to seek out for interviews more than the originally planned five cooperative education students, after face-to-face interviews netted interesting and important information. It was decided to seek interviews with non-cooperative education students also.

From the beginning, the bias which would be introduced by asking the director of the coop program to schedule interviews prior to each site visit had been recognized. However, such a procedure seemed necessary for reasons of efficiency. At Tampa, however, it proved feasible to ask each interviewee to name several individuals he or she knew who was opposed to the coop program. Additional interviews could then be sought with a few of these people in an attempt to off-set the bias likely to result from the original scheduling plan.

Other scheduling problems which cropped up related to the diversity of effort required for interviewing both on and off-campus, and for drawing samples of students and graduates for mail surveying. It was discovered that a two-day, two-person effort was totally inadequate for the task. Hence, a three-day, three-person effort would be henceforth mounted at each site. All three persons would attend the initial interview with the coop director so that each person would acquire the background needed in order to perform subsequent duties. Afterward, each individual would act alone. It was also decided that it was all the site team could handle to complete on-campus interviews. Employers would be interviewed by phone after each site visit.

The drawing of samples of students and graduates for the mail survey proved to be a most difficult task at Tampa due to the reluctance of the registrar's office to cooperate in this effort. It was decided to enlist the help of the president of each institution in the future to encourage the cooperation of the registrar's office in this task.

About 40 interviews were conducted at each of the eight schools selected for site visits. Interviews lasted anywhere from a half hour to an hour and a half. As might be expected, individual interviews often netted conflicting information, and documentation, in the form of brochures, proposals, reports, etc., was sought to clear up these discrepancies. However, when it came to conflicting opinions, this was what the interviews were designed to uncover, and no attempt to reconcile them was made. The expectation was that the various constituencies of a cooperative education program would each provide different perspectives on its goals and objectives and whether they have been achieved or not achieved. It was felt many individuals would provide a truer picture of a school and its program than any single person could offer.

Telephone interviews were conducted with employers selected by the coop coordinator. Interviews were to be conducted with both active and inactive employers; employers whose practice was to hire both many and few students; employers in both technical and non-technical, or "humanistic" fields; and employers representing both large and small companies. All schools were able to provide the names of active employers; two schools -- the University of the Pacific and Pasadena City College -- could not provide names of inactive employers because they said there were none. A total of 25 active and 13 inactive employers were interviewed. Each interview lasted about one hour. Like the on-site interviews, they were loosely structured according to broad guidelines, again in order to fulfill minimum requirements for comparability, and at the same time maximize spontaneity.

Complete lists of students and graduates, both coop and non-coop participants, for the purposes of drawing samples in each category for the mail survey, were made available at only four schools: the University of Detroit, Pratt Institute, Pasadena City College, and Washington Technical Institute. At these four schools, the originally proposed samples of 100 coop students, 100 non-coop students, 50 coop graduates, and 50 non-coop graduates, were drawn. At the remaining schools, the teams were forced to use whatever names could be provided for the drawing of the sample and the total sample size often fell short of the desired total. It can not be therefore guaranteed that the samples drawn at these four schools were random.

(The sample of graduates spanned a period of time dependent on the age of the coop program.)

Questionnaires were designed for each of the four sampling groups, and OMB clearance was obtained. Questionnaires were several pages long, and included both forced-choice and open-ended questions. A cover letter encouraging participation from the coop coordinators of all schools, except the University of the Pacific, was included in the mailed questionnaire package to students. A stamped, addressed return envelop was provided in each package. No follow-up procedures were utilized. A total of 2,111 questionnaires were mailed to the students and graduates -- 651 to coop students, 797 to non-coop students, 339 to coop graduates, and 324 to non-coop graduates. A total of 614 -- or 29.1% -- were returned; 199 (30.6%) from coop students, 228 (28.6%) from non-coop students, 99 (29.2%) from non-coop graduates. The rate of return by school was:

- University of Detroit -- 50%,
- University of the Pacific -- 36%,
- Pratt Institute -- 34%,
- Pasadena City College -- 23%,
- Alice Lloyd College -- 19%,
- Lees Junior College -- 22%,
- Texas Southern University -- 26%; and
- Washington Technical Institute -- 19%.

It is interesting to note that the rate of return did not vary greatly among the four respondent categories, despite the anticipated difficulty of locating graduates with addresses anywhere from one to five years old. A slightly higher percentage of coop participants as opposed to non-coop participants returned questions, most likely signifying an obvious greater interest in cooperative education and any project related to it.

When examining the rate of return by school, the most noticable characteristic is the exceedingly high rate of return from the University of Detroit (50%). Both the University of the Pacific and Pratt Institute also had high rates of return. This may be a function of the relative affluence of the student bodies in each of these three high-cost schools. Many researchers have previously discovered that better-educated, and/or affluent individuals are more likely to respond to questionnaires than their less affluent counterparts.

The data obtained from all sources from each of the eight schools were never intended to serve as the basis for deriving broad generalizations about the world of cooperative education as practiced by over 400 schools in diverse settings with diverse student bodies with a variety of goals and objectives. The sample schools, in no sense, are representative of all the configurations of institutions and programs possible. The information presented in the following sections, therefore, must be viewed in that context. It is hoped that it will serve to raise pertinent questions, and provide a background for further discussion and exploration of these issues.

2.0 OVERVIEW OF COOPERATIVE EDUCATION IN THE UNITED STATES

2.1 Literature Review

Books devoted to the topic of cooperative education in the United States are few in number. Those in existence are mostly handbooks or manuals, designed for an audience of cooperative education administrators and teachers.

Periodicals provide the primary source of information on cooperative education; of special importance are:

- The Journal of Cooperative Education,
- The Journal of Business Education, and
- Engineering Education.

Periodical articles generally provide information and opinions concerning:

- The history and philosophy of cooperative education,
- The goals of cooperative education,
- Descriptions of programs in different institutional settings;
- Specific issues regarding the functioning of cooperative education programs, and
- Evaluations contrasting cooperative and non-cooperative students or graduates.

The authors of these articles tend to be involved in the programming of cooperative education. As the titles of the most frequently cited journals would indicate, cooperative education, as seen in the literature, is most often considered in terms of technical and business education.

A discussion of the literature can be organized into the three domains of students, colleges, and employers.

2.1.1 Students

The major point in such sources as Tyler (1971), Gore (1972), Wilson and Lyons (1961), and Adams and Stephens (1970) can be summarized as follows:

> Work experience brings increased meaning to academic study. Cooperative education students are more involved and motivated than other students. Cooperative work experience makes the academic work more meaningful.

Such authors imply a comparison between cooperative education and other students, with the former seen as more motivated and involved in their own education because their work experience clarifies, builds upon, and provides practical applications for their classroom experiences.

Knowles (1971), Van Sickle (1971), and McKinney (1971) would seem to argue that:

> Cooperative education provides students, especially minorities and women, with special opportunity for career exploration.

Cooperative education is viewed as a convenient testing ground for preliminary career choices. Authors such as these stress the importance of this exploration for minority students and women, both because they face special institutional barriers to many careers and because their pre-college experiences often induce limited perspectives regarding career opportunities.

A study by Kany (1973) revealed that women students tend to cluster in traditionally female fields, but after a coop work experience their expectations widen to include more diverse opportunities.

Other literature sources, including Wilson (1971), Cross (1971), Dawson (1971), and Marks and Wohlford (1971), stress the beneficial effects of cooperative education on personality formation and personal development. Wilson's view is as follows:

> Because cooperative education places the student in new and challenging situations demanding of him new modes of behavior, the experience makes a strong contribution to growth of the individual, in terms of his personal, social, and career development.

Some authors, such as Biester (1972), complain that traditional coop programs are too narrow in philosophy and implementation to serve the needs of a highly diverse student body. Lupton (1971) discusses the special problems associated with liberal arts students in a coop program. He urges programs designed for liberal arts students not be bound by the career orientation of traditional coop programs.

This traditional career orientation is challenged by Probst (1963). He contends coop students become too vocation-minded too soon in their academic career.

Cooperative education, as described in the literature, provides for some shift in the costs associated with higher education. Part of the financial burden is transferred from the educational institution, philanthropists, family and relatives to the student and his employer(s). While the student earns the needed money, he does so, ideally, in an educational context.

> Cooperative education programs provide financial aid for the student. This additional (alternative) source of funding allows students from lower socioeconomic backgrounds to afford post-secondary education which might otherwise be unavailable to them.

Binzen (1973) extends this concept to conclude that:

> ...the predominance of young people from working class families in cooperative education programs fulfills financial needs but also work ethic needs of the youth and his parents.

It is sometimes contended that cooperative education provides the student with a headstart in a career; however, the literature provides little empirical data to support this belief.

2.1.2 Colleges and Universities

The literature provides discussions of the following possible beneficial effects of cooperative programs to educational institutions:

- The programs permit colleges to offer an "enriched program of education" (Bennett, 1969; Heermann, 1973),
- Faculty awareness of new developments is enhanced as a result of cooperative education programs (Heermann, 1973),
- Programs lead to improved community relations for the colleges involved (Tyler, 1971),
- Cooperative education can lead to enhanced efficiency of use of college facilities (Rauh), and
- Programs provide advantages in the recruitment and retention of students (Cross, 1971).

Butler (1973) and Pratt (1972) both see staffing, in general, and the role of the coordinator, in particular, as the most crucial variable in the planning and operation of a successful coop program. Wilson (1972) argues that the various responsibilities of the coop coordinator are so diverse as to be "awesome." Pratt (1972) cautions coordinators that one of their most critical responsibilities is the individual counseling of students.

As far as colleges and universities are concerned, Lupton and McNutt (1972) contend that the most difficult issue facing them is the issue of academic credit. Wilson (1973) describes current practices in regards to the awarding of credit and discusses the various objections to granting credit. He also proposes a rationale supporting granting credit. A report prepared in Tampa, Florida (1971), found a favorable climate for granting credit.

2.1.3 Employers

The literature regarding employers and cooperative education emphasizes improved opportunities to recruit and, in effect, pre-screen future workers. As a result of a survey of employers, Holsensack (1973) discovered that the major objective of employers in regards to coop education is to increase the long-term retention rate of trained and talented personnel, and that the employers felt they were meeting that objective. Nonetheless, they view coop students as temporary employees and typically pay low salaries and offer few fringe benefits. Heermann (1973) argues that since cooperative education student workers have a chance to examine their own suitability for particular jobs, chances are good that subsequent worker turnover is reduced. However, Yensco (1971) contends the claim that cooperative education students remain with a firm longer than do other graduates appears to lack empirical verification.

According to Brown (1971) and Davis (1971), cooperative education student workers have a positive impact on other employees, while improvements in college-community-business relations are emphasized by other authors (such as Cross, 1973). Businessmen benefit by being direct participants in the education of the youth of the community, provided linkages between colleges and the community, and especially employers, are carefully developed and strengthened.

Wilson (1971) questions whether the national economy will be able to absorb the growing number of coop students. Given the current recession, articles by White (1933) and Barbeau (1973) dealing with cooperative education during the Depression are of interest.

2.2 Aggregate Data From Office of Education Files

Summary tabulations were prepared of data derived from some 600 cooperative education proposals federally-funded for FY 73-74 by the Office of Education. The files included funded and 324 non-consortium programs. These data were not prepared for the purposes of the current research, and as such, they require care in interpretation. The variables tabulated concern only non-consortium schools.

The geographic distribution of these 324 schools does not conform to national population distributions. The ten states with the largest number of cooperative education programs, accounting for 50 percent of the (non-consortium) schools, are:

State	Number of Schools with Cooperative Education Programs
New York	23
North Carolina	23
Florida	20
California	19
New Jersey	15
Alabama	14
South Carolina	13
Georgia	12
Virginia	12
Illinois	11
Total	162

An examination of the distribution of programs among various kinds of institutions indicates that cooperative education programs are more likely to be found at the pre-graduate rather than graduate level, and much more likely to be found in public rather than private schools.

Institution	Number of Programs
Graduate and undergraduate	111
Undergraduate only	77
Community or junior college	119
Total	310

Institution	Number of Programs
Public	205
Private	105
Total	310

About one-half of the applications (154) on file were for programs not yet in existence. Thus, 234 of the applications mentioned "planning" as one of the purposes of the grant application, and 70 mentioned "initiating."

Proposal Type	Number of Proposals
Planning	104
Initiating	22
Strengthening	21
Expanding	10
Training	2
Research	2
Planning and strengthening	82
Planning and initiating	48
Other combinations	32
Total	323

The files reveal that fully 90 percent of schools with established programs do not require participation in cooperative education as a prerequisite for graduation. (Given the "planning" and "initiating" nature of many of the proposals, the number of schools responding to questions about their cooperative education programs is considerably smaller than the number submitting applications.)

Is Cooperative Education Required?	Number Responding
Yes	21
No	179
Sometimes	3
Total	203

Given the concerns evident in the literature, much of the data available in the program files proved of particular interest.

Seventy percent of the schools with programs report awarding credit for coop participation.

Is Academic Credit Awarded?	Number Responding
Yes	121
No	51
Total	172

The average number of credit hours awarded (by schools awarding credit) is 5.6 for an average work period of 17 weeks.

Participation in coop programs of minority group students is markedly lower than participation by whites, as revealed by determining the average number of work assignments in 1971 per program for students of varying racial/ethnic backgrounds.

Racial/Ethnic Categories	Average Number of Work Assignments
Black	14
Spanish Surnamed	1
American Indian	<1*
Other (Includes White)	47
Total	62

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*Computed fraction is .389.

The planned number of work assignments for 1972 showed increased expectations for each racial/ethnic category:

Racial/Ethnic Categories	Average Number of Planned 1972 Work Assignments
Black	20
Spanish Surnamed	3
American Indian	1
Other (Includes White)	58
Total	82

Cooperative education programs are generally considered an important means of increasing the financial feasibility of higher education for students from low-income families. Data from the files suggest that the "pool" of students from low-income families is many times greater than the number of cooperative education slots. Schools reported an average population of 1,157 students from families with annual incomes below $7,500, and an average of 82 cooperative education slots.

As the literature review revealed, the role of program coordinator is generally acknowledged to be of central importance to the success or failure of cooperative education programs, since this staff person is responsible for balancing the needs of students, school, and employers. The reported assignment of coordinators is therefore of interest. A total of 107 schools reported full-time coordinators, and had, on the average, two such coordinators. The 72 schools reporting part-time coordinators had an average of 2.8 part-time coordinators. The ratio of students to coordinators for 147 schools reporting is 76:1, indicating that it may be difficult for schools to provide individual attention to each student and his work situation.

The average number of "employing agencies" per school is reported at 71. Since the average number of planned work assignments is 82, it appears that most employers take only one student.

Some college courses of study have historically been associated with cooperative education. Students in cooperative education were most often business and accounting majors in 42 of the schools; engineering majors were the most frequent participants in another 30 schools. The most frequently reported majors were as follows:

Major	Number of Schools Reporting this Major as Mode
Business/accounting	42
Engineering	30
Sociology	6
Education	4
Liberal arts	3
Data processing	3

2.3 Implications of Overview Analysis

Both Office of Education files and relevant literature served to raise significant questions related to cooperative education. Among these questions are:

- Is the awarding of academic credit appropriate for work experiences? If credit is awarded, how much should be awarded and under what conditions?

- How appropriate is the cooperative education experience for students pursuing various fields of study?

- To what extent are cooperative education programs providing increased educational and occupational opportunities to minority, women, and low-income students? What is their potential for providing these opportunities?

- What are the merits of mandatory versus elective participation in coop programs?

- Despite its avowed goal of broadening student occupational horizons, might cooperative education instead be leading students to focus too early on a single career line?

- In what ways does cooperative education differ from other part-time student employment?

- What are the structural and administrative requirements -- especially in regards to the role of program coordinators -- of coop programs?

- What is the potential for growth of coop programs, given hiring limitations of both public and private employers?

These questions must all be confronted and answered by cooperative education programs in light of the goals and objectives which they have set for themselves. These questions received special attention during the collection and later analysis of primary data. Together with the nine "probes" identified as a result of the University of South Florida pre-test experience, these questions were the "meat" on the bare "bones" of the guidelines which were developed for interviews with college and university personnel and students, and student employers. The questions involving increased educational opportunities for minority, women, and low-income students, and the difference between coop and other part-time student employment, were also addressed by the mail survey.

3.0 COOPERATIVE EDUCATION AT EIGHT COLLEGES AND UNIVERSITIES

The following subsections draw upon data from individual site visits, telephone interviews with employers, the mail-survey of students, and file data to describe how cooperative education programs operate at each of eight sample schools and identify major issues raised by the experiences of each program. The schools are described in two groupings: (1) the first four schools having at least half of their students from families with annual incomes over $7,500; (2) the last four schools having a majority of students from families with annual incomes under $7,500.

A chart capsulizing several key aspects of the schools and their cooperative education programs follows.

3.1 University of Detroit

3.1.1 General Background

The University of Detroit is an independent university, founded in 1877, and operated under the auspices of the Jesuit order. The major degree granting divisions of the university are: the College of Arts and Sciences, the College of Business and Administration, the College of Engineering, the School of Architecture, the School of Law and the School of Dentistry.

	Lees Junior College	Alice Lloyd College	Pasadena City College	Washington Tech. Institute	Pratt Institute	University of Detroit	University of the Pacific	Texas Southern University
Type	Junior college, Liberal Arts	Junior college, Liberal Arts	Junior college, Liberal Arts, Vocational	College Vocational	College, Vocational	College, Liberal Arts	College, Liberal Arts	College, Vocational
Funding	Private	Private	Public	Public	Private	Private	Private	Public
Geography	Rural	Rural	Urban	Urban	Urban	Urban	Urban	Urban
Size Total Coop	(250) 19	(190) 62	(16,000) 738	(4,300) 100	(4,000) 650	(9,000) 750	(4,000) 183	(7,200) 128
Scheduling	Mixed	Mixed	Parallel	Mixed	Alternate	Alternate	Alternate	Alternate
Field	Social Science	Social Science	Mixed	Mixed	Mostly Engineering	Mostly Engineering and Accounting	Engineering	Mostly Engineering and Accounting
Mandatory or Voluntary	Voluntary	Voluntary	Voluntary	Voluntary	Voluntary	Mandatory	Mandatory	Voluntary

Tuition and fees at the university total about $2,000 a year. In attempt to equalize the attractiveness of private and public institutions, the state of Michigan will grant up to $1,200 a year to students who meet certain financial qualifications so that they may attend schools like the University of Detroit.

Most of the students attending the university are from the Detroit area and live at home. About 20 to 25 percent of the 9,000-student enrollment is black, almost all of them enrolled in liberal arts programs. In its 1972 application for federal funds for its coop program, the university anticipated 18 percent of its student body would be from families with less than a $7500 annual income. Obviously, many Detroit students must therefore work full or part-time while attending school. One faculty member, in fact, estimates as much as 80 percent of the student population must work to stay in school.

Naturally, the university is strongly affected by the vagaries of the auto industry which dominates the Detroit economy.

3.1.2 Program Development

The cooperative education program at the University of Detroit is one of the oldest programs in the United States, founded just five years after cooperative education was originated in 1906. When a group of Detroit industrialists founded the College of Engineering in 1911, they incorporated cooperative education as a mandatory component of the curriculum. All of the 8,500 engineers who have been graduated since then have been cooperative education program participants. Cooperative education was introduced as a mandatory program in the School of Architecture in 1920. One year cooping meets the licensing requirement for a year's apprenticeship. Since then, coop has been added as an optional program to the curricula of a number of other subdivisions of the university: to the graduate division of the College of Business and Administration in 1958; to the accounting department in 1963; to other departments in Business and Administration in 1967; and to the College of Arts and Sciences in 1970. Today, any undergraduate may elect to have a coop experience; overall about 33 percent do. The only requirement is a 2.0 grade point average and evidence of superiority in courses related to career objectives.

The director of cooperative education credits much of the success of the program at Detroit to the fact that it has been introduced into new departments and colleges at the request of faculty and deans instead of being introduced by an outsider. Coop grew naturally -- it was not forced.

A special cooperative program designed to attract blacks to careers in engineering was initiated in 1972. This program seeks to identify qualified black students in Detroit high schools with aptitude for engineering and place them in a pre-college cooperative experience. Another special program to attract women to careers in engineering will be implemented this year, and will be operated in conjuction with a consortium of liberal arts colleges for women in the Detroit area. This program will offer women a chance to complete not only their liberal arts degree but also an engineering degree in five years.

The program within Arts and Sciences is still developing. Only about 25 students are currently enrolled. Bad economic times, reflected especially harshly by the auto industry in Detroit, has made growth more difficult. Although the program is available to any Arts and Sciences student, it is especially targetted at disadvantaged students admitted to the university as part of Project One Hundred, which seeks to admit 100 inner-city high school students with high academic potential, but who have evidenced little concrete achievement, to the school each year. A special effort is also being made to attract participants in Project Fifty -- B.A., a similar program seeking to recruit disadvantaged students to the College of Business and Administration and to the cooperative education program.

As the program has grown, so has the cooperative education staff. An associate director was added about 20 years ago; a supervisor for cooperative education was added in 1970 and assigned special responsibility for developing the Arts and Sciences program. Four full-time coordinators are also part of the cooperative education office. The office is neither geographically nor administratively located in any single department or college; it is considered to be a university-wide operation. The first coop director was the chairman of the College of Engineering. From the coop program came the idea of a placement service for school graduates and, today, the coop director is also director of placement and career counseling. The current director has a B.S. in aeronautical engineering and a masters in business.

3.1.3 Present Operation of the Program

In its recruitment brochure, the University lists these objectives for the coop program: (1) to enable the student to see how theory is applied in "actual work situations" in order to develop an appreciation and a greater interest in coursework; (2) to broaden a student's human relations experience; (3) to develop maturity in the student; (4) to enable the student to finance a portion of his education; and (5) to allow an employer to identify potential employees. The brochure cautions, "educational and training values must be the paramount consideration in the placement of students, and must take precedence over earnings, convenience of location, working conditions, and personal preferences. Employers . . . should not exploit students by sacrificing educational purposes to immediate employment needs."

Seventy-one percent of the 1972 coop students (734) were engineering students. Other significant sources of coop students are accounting, architecture, and business administration. Eleven percent were black.

All coop students at the University of Detroit alternate work and study periods. Graduate students may take two to three work periods; engineering students usually take four work periods; all others usually take three work periods. Most undergraduate students receive their first work assignment during their junior year. Assignments are made at various times throughout the year so students experience first hand the seasonal fluctuations of some businesses. Students may not stay on the job for three consecutive terms -- they would be workers then, and not students at all, argues the coop staff.

Students are encouraged to stay with the same employer throughout their coop experience in order that they may advance in terms of the responsibility they are required to assume and in terms of salaries. The coop office does not view its students as "part-time employment" or "just another pair of hands". Employers enjoy the services of an eventually more qualified worker and, in exchange, they are expected to make a commitment to the student's growth and to hold his position open for him while he is attending school. Only about 25 percent of the students change assignments (the percentage is higher in Arts and Sciences and lower in Engineering), although faculty say some students complain about lack of variety.

Credit is awarded only after all coop assignments and related courses, if any, are completed. If anything less than all of the assignments are completed, no credit is awarded. Liberal arts majors are awarded three credits for each cooperative experience; all others receive one credit for each experience. Coop credits may be utilized to meet graduation requirements. Students receive grades for their coop experiences from their coop coordinator. He bases his evaluation primarily on a report from the student's supervisor at work, and secondarily on a report written by the student himself. A student's performance in coop-related courses also is taken into account.

Detroit's cooperative program received no federal monies until 1970 when it received $62,076, including a significant portion aimed primarily at developing a coop program for Project One Hundred participants. Federal funds, which amounted to $40,000 in 1973-74, have been used also to develop the Arts and Sciences program. Detroit has received support over five years from the federal government, support the director of the program considers absolutely essential to success, especially in large institutions. He believes the program in Arts and Sciences would have failed with funding for only three years, largely because of the recession in the auto industry and the subsequent difficulty of placing students in work situations. Without many students in successful work situations, word-of-mouth publicity has been slight. In addition, the College changed deans and the new dean had had little exposure to the benefits of cooperative education.

In fiscal year 1974, Detroit also received a $30,000 grant to continue operation of its center for the training of administrators of cooperative education in the midwestern United States. The University predicts they will train 300 educators during a three-year period.

In schools and colleges in which the cooperative education experience is not mandatory, recruiting is conducted via mass meetings or assemblies planned and conducted by the coop coordinators each year. Other methods utilized include: the dispensing of information concerning coop programs at the annual Freshman Fair; faculty and student referrals; advertisements posted on bulletin boards around the campus; word-of-mouth. The recent merger of the cooperative education office with the career counseling office has also facilitated recruiting.

The major roadblock standing in the way of attracting more students to cooperative education seems to be the fact that coop students must attend summer school usually twice during their university career. Not only the idea, but also the schedule of classes they are offered, is usually considered unattractive by students. The University does not like summer school much better because classes are so small that they are overly costly.

Most employers have participated in Detroit's cooperative program for many years now; about 300 employers are now participating. New employers are often recruited with the help of one-time faculty members and coop coordinators who are now working in industry. When the Arts and Sciences program was introduced, the coop staff consulted the college placement annual to see what companies hire liberal arts majors and then recruiting was conducted among their ranks. They also discovered that liberal arts majors sometimes end up in management at Ford and GM and Chrylser, even though these three companies do not recruit from among the liberal arts ranks. These students enter management via trainees programs set up by the industry itself. The coop director has tried to use this discovery to prod the automakers into being more receptive to the idea of accepting students as coop employees. Sometimes new companies are discovered with the simple help of the

Yellow Pages. Needless to say, current recruiting has been adversely affected by the recession. Each of the three top members of the coop office staff make a point of making visits to various companies about twice a month, not only to tend to relations with the school, but also in an attempt to keep abreast of the economic tradewinds which might affect the coop program.

Matching students with jobs is fairly easy when it comes to engineering students -- many more placements would be possible. There is an equally high demand for accounting majors, especially if they are honor students. It is a much more difficult matter with Arts and Sciences students -- the number of students expressing an interest in the program is far greater than the number of placements available, although many of them are reluctant to accept available jobs in marketing and sales. Problems with unions have also cropped up. According to the liberal arts coordinator, white males are especially hard to place. Recruiting among liberal arts students has, therefore, been pretty low-key, although considerable effort is being expended to encourage students to augment their liberal arts studies with courses such as accounting which will equip them with marketable skills. Assignments for liberal arts students are less likely to be directly related to their major than for other students. The Internal Revenue Service is the major liberal arts employer.

Lack of skills is a problem facing most students on their first coop assignment. Often even by the end of their sophomore year, they still have taken nothing but basic, and very general, courses. Some students interviewed said they would like to have taken a few specialized courses before they were sent out on their first coop assignment.

The coop staff anticipates about five percent of its students will have serious problems on the job, but they contend almost all problems are idiosyncratic, peculiar to a given job site. Minority students, especially, often have problems.

Most coop placements are made in the Detroit area, although about half of the engineering students accept jobs out-of-state. About 15 percent of business students and 10 percent of the liberal arts students also work out-of-state. These placements, however, are typically in the student's home town. Some students interviewed complained about the complete loss of contact with the campus while away and suggested a coop newsletter or more visits from faculty or coop coordinators.

Every attempt is made to develop alternative placements to the placements in the auto industry in anticipation of the periodic economic setbacks which plague Detroit.

Entry level salaries for students of engineering and architecture are $500-$600 a month; for students in business about $700; and for students in Arts & Sciences about $400 a month. Most students receive whatever fringe benefits are provided the companies' regular employees. Some companies extend benefits to include coverage during the student's semesters at school.

Financial aid is available to coop students as it is to any other student. Aid is based both on financial need and academic achievement. A standard range of grants and loans are offered. A coop student's earnings are taken into account when determining his need for aid. Although the coop director contends students should be able to support themselves on their coop earnings, the financial aid officer estimates about half of the coop students receive some form of financial aid.

Coop earnings in some instances are sufficient enough to enable a student to support himself while attending school, although most students interviewed said they still receive additional support from their family or financial aid packages.

3.1.4 Student Survey Findings

The student and graduate responses from the University of Detroit to the mail questionnaire were very good with an overall return rate of 50 percent.

	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate	Total
Questionnaires sent	100	100	50	50	300
Questionnaires returned	63	46	32	10	151

Students and graduates -- both coop and non-coop -- overwhelmingly reported having entered the University as freshmen.

Level entered	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Freshman	51	19	13	9
Sophomore	2	4	0	1
Total	62	41	31	10

The racial/ethnic composition of the sample is predominantly white. However, as can be seen in a number of schools, the proportion of non-white individuals among the student sample is higher than the proportion of non-white individuals among the graduate sample, indicating a degree of success for stepped-up minority recruiting efforts at Detroit and other schools too.

Race	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Black	7	8	0	0
White	52	22	31	10
Oriental	1	0	0	0
Other	2	3	0	0
Total	62	33	31	10

It is interesting to note that the 11 percent of coop student indicating they are black corresponds to the 11 percent black population among coop students reported in the 1972 grant application.

No great differences are apparent in the history of parental college attendance between students and graduates and coop and non-coop participants (the possible exception being non-coop students, who seem to be more often reporting parents with some college or college completed than other categories of respondents; however, since the sample here is so small no conclusion should be drawn):

Father's Education	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Some college	14	9	6	1
College completed	8	3	4	2
Graduate school	6	3	3	0
Total	62	33	32	10

Mother's Education	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Some college	7	11	3	3
College completed	8	5	6	0
Graduate school	5	0	2	0
Total	62	33	32	10

Data concerning both family economic status and parent's income may reflect the fact that the Detroit cooperative program, founded over 60 years ago, was founded to give engineering students practical experience, and not, as some of the later programs have been, to enable economically-disadvantaged students to afford a college-level education. Only three percent of the coop students say their families are "poor" or "very poor"; 95 percent say their families are "getting along" or "well-to-do". However, 20 percent of non-coop students report "poor" families. Coop graduates all report families "getting along", "well-to-do", or "wealthy".

Family Economic Status	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Wealthy	0	1	1	0
Well-to-do	21	12	7	4
Getting along	37	20	24	6
Poor	2	8	0	0
Very poor	1	0	0	0
Total	61	41	32	10

Cearly, income data should reflect the same conclusions as family economic status data, and in all instances but one they do. However, while only three coop students report families who are "poor" or "very poor", six coop students (10 percent) report parents with annual incomes under $5,000. Another five (eight percent) say their parents earn $5,000-9,999 per year. This discrepancy probably reflects little more than a young person's often times ignorance of his family's income.

Thirty-three of 63, or 52 percent of, cooperative students, and 22 of 32, or 69 percent of, cooperative graduates report engineering majors. (An increase in the proportion of coop students reporting accounting and architecture majors on the questionnaires accounts for the difference between the 1972 grant application which claims 71 percent of coop students were engineering majors and the 1974 questionnaire response of 52 percent engineers. Whether this represents a sampling error or a real shift in the parameters is unclear.) Not one non-coop student reported an engineering major; only four of the 30 non-coop graduates reported engineering majors. Clearly, the collection of majors of coop versus non-coop students and graduates is largely disjoint.

Twelve of 32, or 38 percent of, cooperative graduates report going on to graduate school. No comparison would be valid, however, with the number of non-cooperative graduates going to graduate school because only six of the 10 non-cooperative graduates chose to respond to that question.

Engineering undergraduates are expected to complete four work periods; other students usually complete two or three work periods. However, when asked "how many jobs have you had as part of the cooperative education program", only four, or 14 percent of, coop graduates reported having had four jobs or more -- a considerably smaller number than the 22 of 32, or 69 percent of, coop graduates who said they were engineering majors. Eight coop graduates, or 28 percent, reported having had three jobs, and six coop graduates, or 21 percent, reported having had two jobs. Ten coop graduates, or 34 percent -- the largest single group -- reported having had only one job. The most apparent conclusion to be drawn from this data, that students are not completing the number of work assignments they are expected to, may not be correct. By scrutinizing individual questionnaires, it seems that some students may have erroneously interpreted the question to mean "how many employers have you had as part of the cooperative education program." The data would then reflect the Detroit policy of encouraging its students to stay with the same employer throughout their coop career, i.e., more students reported having had one job than having had two, than having had three, and having had four or more.

Number of Coop Jobs	Coop Graduates
0	1
1	10
2	6
3	8
≥4	4
Total	29

The hours per week reported by those reporting work while in school are, as could be expected, markedly higher for coop participants. Coop students report working 40-hour work weeks, as do coop graduates when asked about their student work careers. This is indicative of Detroit's commitment to the alternate plan of cooperative education.

Work Weeks While Attending School	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Average hours/week	40	34	40	27
Total responding	57	28	30	8

Weekly incomes, both at the start of college employment and most recently, are highest for coop students as compared to non-coop students. When graduates were asked about their college work experiences, coop participants claimed they earned higher wages both as beginning workers and later than did non-coop participants. It is interesting to note that even today's rampant inflation does not seem to erase the assumed beneficial effects of coop participation on income, as the salaries of coop graduates during college are still higher than the salaries of non-coop students, who are presumedly being paid at current inflated rates.

Average Weekly Pay While Attending School	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
At the start	$153	$131	$141	$64
Most recently	$170	$155	$165	$89
Total responding	55	24	27	8

Although data drawn from such small samples are not usually considered important, it is worth mentioning that 19 of 27, or 70 percent of, coop graduates reported they liked their current jobs, two of nine, or 22 percent of, non-coop graduates reported they liked their jobs.

Attitudes among coop participants, both students and graduates, are predictably overwhelmingly postive toward cooperative education.

However, a substantial proportion of non-coop participants -- 26 percent among students and 46 percent among graduates -- also indicate positive attitudes toward cooperative education.

Attitude Re Coop	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Very Positive	35	6	18	2
Positive	19	6	11	2
Total	54	12	29	4
Total Responding	63	46	32	10

Another approach to the evaluation of cooperative education is the behavioral question posed to both coop and non-coop graduates:

> If you were to go to college over again, do you think that you would become involved in the cooperative education program?

The responses indicate extremely strong support from the coop graduates:

Would You Become Involved Again?	Coop Graduates	Non-Coop Graduates
Yes	27	3
Total	29	6

Considering the data concerning the incomes of students and graduates and the response to the questions concerning attitudes toward cooperative education, it appears to be valid to conclude that the University of Detroit program is functioning well in terms of both outcomes and opinions.

3.1.5 Employer Perspectives

The active employers of University of Detroit cooperative students interviewed as part of this study were a bank, a T.V. station, and an insurance company. Inactive employers interviewed were a metals manufacturer and an automotive company. The active employers currently employ one or two coop students each and have employed one or two students each year of their involvement with coop education. The length of involvement with Detroit's coop program ranges from six months by the automotive company to 40 years by the metals manufacturer. The others have been involved for approximately five years. The metals manufacturer employed twenty students over its 40 years of participation, and the automotive company employed ten students during its six months.

The companies said they became involved because they saw coop students as an excellent source of future permanent employees. The coop experience offers the employers an opportunity to evaluate the students' performances. All of the employers have hired or would like to hire at least one of the coop students who have worked for them.

Two of the currently active employers plan to continue their involvement in the coop program. They hope to expand their programs to include a larger number of students in a wider variety of areas. The other active employer plans to discontinue its program. The two inactive employers say they have discontinued their programs because of the present state of the economy. There are no openings for students; they are even laying off their regular full-time employees. These employers said they may become involved in the coop program again if the economy stabilizes.

All of the employers, both active and inactive, favor the alternative plan. They also prefer having students return to the same employer for subsequent coop assignments. They feel they can offer continuity in training, thereby helping the student gain increased professional skills, and better judge the student's performance.

These employers receive no financial assistance from the University for employing coop students. Student salaries range from $58 weekly to $206 weekly, depending upon the job, amount of responsibility the students shoulder, and the number of terms they have worked for the company. Two of the companies declined to reveal the salaries they pay coop students. The students receiving the lower salaries were copy people, production assistants, tellers and those doing general clerical work. The higher salaries were earned by those students who were accountant trainees and engineering trainees.

Two employers said they knew students receive academic credit for their work; the others did not know if credit was awarded.

One company, the bank, has its own coop student coordinator who works with the university's coordinator to supervise, place and evaluate the coop student. The other four companies do not. The bank requires an application, testing, and personal interviews before hiring students. The other employers rely on the university to screen students. The companies then conduct brief personal interviews.

All of the employers expressed very positive attitudes about coop students as employees. They said the students seem highly motivated, very interested in their job, and perform very well. They say the students offer employers new ideas, and provide a different point of view on many subjects.

Only advantages were perceived by these employers when it came to hiring coop students. As previously stated, they feel the program is a good source of future permanent employees. If the student is hired after graduation, his experience and, possibly, training helps him move smoothly into the job. This cuts down on turnover.

All of the employers interviewed said their companies encourage their regular non-student employees to further their education. Three of the companies offer tuition assistance or refunds to employees who want to attend school.

Two employers offered several recommendations for improving the coop program: students should know more about their jobs and duties before coming to work; jobs should relate to the student's major; more minorities, blacks specifically, should be recruited for the coop program; students should not have to pay tuition during coop periods; and all students should receive credit for their work experience.

3.1.6 Perspectives on Program and Students

Faculty, as well as students, speak highly, during interviews, of the coop experience. Faculty see coop students as highly motivated and able to translate their motivation into higher grades. Other typical faculty comments center around the coop student's maturity and his ability to relate theory to practice. They seem to appreciate the individual viewpoint they say coop students bring to class. Two students interviewed contended their coop experience taught them more than any class they ever took.

Faculty agree with students that coop is a means of guaranteeing employment and a higher salary for the student upon graduation. One faculty member pointed out, however, that he felt the advantages of a coop student wears off after several years in industry and individual initiative and ability take over.

The coop program has proved itself directly beneficial to the University, also. The College of Engineering has received donations of equipment from industry. The College has asked executives from industry from time to time to serve as adjunct professors teaching at the undergraduate level. An industrial advisory board, composed of both executives and faculty, periodically reviews the engineering curriculum. The dean of the College is currently at work designing a program which would put his faculty in industrial positions for four months each year during their vacation in order to keep them abreast of the latest technological developments.

Although it is true that faculty support for the coop program is high, it would be erroneous to leave the impression that it is without its detractors. A man deeply involved in recruiting liberal arts majors for the program had these reservations: (1) coop focuses a student's mind on the practical before he is ready for it; (2) students are not adequately prepared for the often new and frightening interview situation; and (3) employers often benefit more from the coop experience than students. Other liberal arts faculty are troubled by the prospect of their hard-to-place students ending up in dead-end jobs filing and clerking -- although the liberal arts coordinator insists she will place no one as a file clerk.

Faculty support among the liberal arts departments has been, in general, good however -- especially in those departments like English where enrollment has been dropping and the coop program is seen as a way to recruit more students.

3.1.7 Future

Clearly, cooperative education at the University of Detroit is firmly entrenched in the institutional structure and is in no way in danger of being dislodged.

The most common suggestion for improvement of the program in the future from faculty and deans is the call for more faculty involvement in supervising and evaluating the student's coop experience. These reformers contend that faculty are more competent to judge the student's performance at work than the coop coordinators.

A number of suggestions are being made, in an informal manner, for the utilization of federal funds: to improve the coursework associated with coop; to facilitate relations with industry; to sponsor a pre-coop program to be conducted by industry for students during the summer following their freshman year; to conduct a formal evaluation of the coop program; to develop a program to expose high school students to a variety of careers; etc.

3.2 University of the Pacific

3.2.1 General Background

The University of the Pacific, founded in 1851, was California's first chartered institution of higher education. Private, coeducational, and residential, it currently enrolls about 4,000 students on its Stockton campus. Tuition is more than $3,000 annually; room and board costs more than $1,500.

The University's major academic divisions are: the College of the Pacific, a liberal arts component; professional schools of Music, Education, Law, Engineering, Pharmacy, and Dentistry; the Graduate School; and three cluster colleges, Raymond, Elbert Covell, and Callison. The cluster colleges, designed to boost attendance in an era of soaring costs for private institutions and a burgeoning low-cost state college network, were introduced in the 1960's as American replicas of the English Oxbridge system. About 250 students and 24 faculty members share living and learning environments in each of the three colleges. Each college has a specialty -- Raymond in experimental education; Elbert Covell in bilingual instruction; and Callison in non-Western studies.

Stockton is primarily an agricultural community of about 100,000 people, with 41 percent of its school population black, Mexican-American, or Oriental. Stockton appears prosperous but Labor Department statistics reveal it as possessor of the worst long-run unemployment record of any city in the United States. About 20 percent of the city's families earn less than $3,000 annually. Half of the university's enrollment comes from families earning less than $7,500 annual income.

3.2.2 Program Development

The history of the growth of the cooperative education program in the School of Engineering at the University of the Pacific is the story of the growth of the School itself. The coop program has been the lure with which increasing numbers of young people have been enticed into the School's student population.

An engineering curriculum, which included a work-study component, was first offered at the University in 1924, but over 30 years later it had still not been accredited by the Engineers Council for Professional Development. The university attempted to strengthen its program in 1957 and win accreditation by organizing it as a separate college within the university structure, placing it under the direction of its own dean, and housing it in its own building. The attempt was futile, and in 1967, with only about 50 students and five faculty members in the School, the University was forced to choose between abandoning engineering or allocating the resources for another try at accreditation. The board of trustees elected the latter option.

While the School searched for a new dean, the faculty moved ahead with several innovations, one of the most important of which was the introduction of a mandatory cooperative education program. The rationale for the coop program was threefold: (1) it would increase enrollment;

(2) it would open the school to the financially disadvantaged; and (3) it would provide many educational benefits for all students. Even before the new dean arrived and, as one of his first chores, applied for federal monies for the coop program, the faculty had already begun to place a few students in coop positions.

The first federal grant was a $35,000 planning grant awarded in 1970, part of which was used to hire a consultant, part of which was used to pay a coordinator, and part of which was used to contact employers. No federal money was made available in 1971, but in 1972, the University and the School received $40,000; in 1973, $40,000; and in 1974, another $35,000.

The school's stepped-up recruiting effort, which relied heavily on the lure of the coop program to offset any repellent effect of Pacific's high tuition fee, was directed at two populations: minorities, and students attending community colleges. The dean of the School of Engineering negotiated articulation agreements between Pacific and 50 community colleges providing for the easy transfer of students to the senior institution. Pacific provides advising services for interested community college students.

Despite the fact that the number of students in engineering has decreased nationally in the last half dozen years, the number of students in Pacific's School had climbed to 183 by fall 1974. (This national trend probably accounts for the School failing to meet its goal of 200.) Minority enrollment has jumped from less than 18 percent in 1969-70 to 28 percent in 1974-75. The percentage of students transferring from community colleges has increased from less than 10 percent in 1969-70 to 60 percent in 1973. Ten faculty members are now on the staff.

The school was accredited in 1971, and the dean considers the coop program to have been an important factor in the attainment of that accreditation.

3.2.3 Present Operation of the Program

All students in Pacific's School of Engineering participate in the coop program. The ordinary junior and senior years are expanded into three years of three semesters each -- summer, winter, and spring. The student alternates between semesters in the classroom and semesters at work. Of the last nine semesters, five are spent on the campus and four are spent on various job sites.

Although reserving work experiences for upper division students is a necessity if community college students are to be attracted to the program, it also guarantees employers a more mature, skilled student employee, ready to assume responsibility in connection with his work.

Students transferring from community colleges spend the summer term of their first full year at Pacific on campus being oriented to the new curriculum. They then go to work during the winter term. It is only after they have completed their first work assignment that they are billed for their first year's tuition. Tuition is charged for a complete academic year -- including time both on campus and off. Students who spend their freshman and sophomore years at Pacific go to school and work the opposite semesters as transfer students.

Although students are technically awarded 16 credits for their work experiences, the credit cannot be substituted for any required classes. In other words, the coop credits cannot be used to circumvent the standard curriculum. This practice is dictated by the accrediting body, the Engineers Council for Professional Development.

The coop program is led by a director and an assistant. This staff assumes responsibility for placing students in work situations. Recruiting of employers, however, has not been conducted since the first year of the program. The number of jobs available has always exceeded the number of students ready to fill them. The initial recruitment of employers was done by the dean, before the hiring of the director, with letters and frequent speaking engagements at meetings of professional societies. A handful of students come up with their own placements which must be approved by the coop director. Sometimes jobs which cannot be filled with regular upper division coop students are offered to younger students as possible summer positions.

The recruitment of students on campus, of course, is not an issue at Pacific since the coop program is mandatory. But recruiting students in high school and community colleges for the School is a very important undertaking. Recruiting in high schools is done by the admissions office for all university subdivisions, but recruiting in community colleges is done by the assistant to the coop director. The assistant relies heavily on the coop program to sell students on the idea of coming to Pacific. Earnings from the four semesters at work can be used to offset high tuition costs -- particularly high in comparison with the free state university system. And coop virtually guarantees employment, usually in higher paying positions than offered non-coop participants, after graduation. All the standard recruiting methods are utilized -- brochures, pamphlets, speeches, etc.

Students may elect to either return to the same employer for subsequent coop assignments or change employers. The School encourages neither option but allows each student to make that decision himself. The director tries to acquaint the students with the advantages of both options: consecutive employment guarantees a job at graduation but limits awareness and scope. Up to 90 percent of the students are usually placed within California -- most of them in Los Angeles or San Francisco. Four or five students are placed overseas and the rest are placed in other states in the United States. All of the problems with out-of-state placement are common to Pacific, too. Out-of-state employers here, however, usually pay for traveling expenses to the new job site.

All coop jobs are directly related to the students' studies in the sense that they are all engineering jobs. But there is a basic difference between work and study in that work is practical and study is theoretical. And so employers often complain that students aren't specialized enough.

Students are required to send the coop director a postcard immediately after beginning to work. They are also required to write a letter describing their initial impressions of the job after two weeks. The director, his assistant, or sometimes faculty in the case of jobs in the Stockton area, attempt to visit the students on the job site once each semester, although a number of students complained they were not visited.

At the end of the work experience, the student submits a report covering both the personal and technical aspects of his job. The report is circulated among the faculty to keep them abreast of their students' progress. The reports are also made available to other students seeking information about a prospective employer.

Students earn an average of $607 per month during their first year in the coop program; an average of $637 per month during their second year; and an average of $677 per month during their third year. Students are told they can earn $10,000 in their three years in the program -- enough to pay their tuition but not their living expenses. Pacific students most often typify the middle-class student who can pay some of his college expenses -- but never quite enough. Even with the coop program, students with no outside source of funds (e. g., his family) can't hope to go to Pacific, except in the few instances where an exceptionally high-paying job is found for a particularly needy student. The $10,000 recruiters tell students they can expect to earn with coop is an intentionally low estimate to prevent high hopes which may end up quashed.

The dean of engineering estimates about 50 percent of his third, fourth, and fifth year students receive some form of financial aid. (Precise figures are not available because the financial aid office does not keep separate records for coop students.) Loans are available to meet immediate expenses but a limit had to be set when students began graduating with $6,000 debts at the financial aid office. The Minority Engineer Educational Effort and the Community Involvement Program are special aid packages aimed at minorities. A handful of students -- 10 or 12 -- usually work part-time during their semesters on campus; only one of those working at the time of the interviews was employed under the auspices of the work-study program.

Students who cannot afford to spend their first and second years of college at Pacific are routed through the community college system.

Perhaps because the faculty initiated the idea of coop, the director of the program at Pacific seems to have few problems in his relationships with faculty. He describes them as "100 percent supportive." He believes his advanced degree (an M.A. in political science) also helps give him the status he needs to deal with them on their own level. He sees the essential task of the director as coordinating the needs of students, faculty and employers.

Although the School of Engineering is the only division of Pacific receiving federal funds for a coop program, a number of other divisions have similar programs providing for both paid and unpaid work experiences. The program which most closely resembles the Engineering program is the School of Pharmacy preceptor-intern program. Students in pharmacy work for one four-month semester as an assistant to a licensed pharmacist, usually earning about $1,600. The School of Pharmacy also has a clerkship program which places students in hospitals. Students in the clerkship program are not paid. Both programs are designed to offset the "overtrained/underutilized" syndrome common to pharmacists. The development of communication skills is emphasized.

It is interesting to note the differences in approach to coop programs as enunciated by the deans of Raymond and Covell College. The dean of Raymond College does not believe the cooping student should be paid. He is essentially opposed to the idea of being paid to learn, although he also fears forfeiting control of the student to the employer. As far as the dean of Covell College is concerned, the purpose of the program is for the student to make money. Supervision of coop students seems more strenuous in both Raymond and Covell than is typical in either the engineering school or in other universities and colleges. A cooping student in Raymond is supervised by a special faculty advisor who assigns a reading list to the student to complete during his time off campus. The student must keep a daily journal of his work experiences, as well as submit a final report. A cooping student at Covell is supervised by a committee of four: the provost, a preceptor, an academic advisor, and a special coop advisor.

Other colleges and schools at Pacific allow for some kind of work experience, typically in the form of internships with no pay. Faculty and administration in other schools seem particularly concerned with issues centering around how worthwhile or valuable a work experience can be.

3.2.4 Student Survey Findings

Thirty-six percent of the questionnaires mailed to the students and graduates of the University of the Pacific were returned.

	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate	Total
Questionnaires sent	100	100	35	49	284
Questionnaires returned	38	37	13	14	102

Although the majority of coop participants entered the University as freshmen, a substantial number entered as juniors, reflecting the effects of the active recruiting of students among the graduates of two-year institutions. The responses of non-coop participants do not indicate a similar pattern.

Level entered	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Freshman	20	23	6	8
Sophomore	2	2	1	3
Junior	15	8	5	3

Coop participants all report engineering majors, with one exception, a student reporting an electrical and mechanical technology major. A cluster of 10 health professions majors surfaced among non-coop students, representing 28 percent of the sample.

The racial/ethnic composition of the four categories of respondents reflects the commitment to equal opportunity in education for minorities adopted in the 1960's by colleges and universities all over the nation and specifically, by the University of the Pacific. Graduates, both coop and non-coop participants, are overwhelmingly white, while students are a much more heterogeneous population, although obviously still white-dominated.

Race	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Black	2	2	0	1
White	26	25	13	12
Mexican American	4	3	0	0
Oriental	4	5	1	1
American Indian	2	3	0	0
Total	38	38	14	14

The data concerning parents' education reflect a similar trend: students today are more likely to come from families with less of a traditional commitment to higher education, as reflected in the parents' educational attainment.

Father's Education	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Grammar school	6	3	0	0
Some high school	2	5	0	0
Completed high school	7	10	2	2
Some college	7	5	8	4
Completed college	8	10	3	4
Graduate work/degree	8	4	1	3
Total	38	37	14	13

Mother's Education	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Grammar school	5	5	0	1
Some high school	2	5	1	0
Completed high school	10	5	1	3
Some college	9	11	7	5
Completed college	8	9	4	3
Graduate work/degree	3	2	1	2
Total	37	37	14	14

Again, more students than graduates report families with annual incomes of under $10,000. Among students, coop students are more concentrated in the lower-to-middle income strata ($5,000-$14,999) than are non-coop students -- 45 percent as compared to 27 percent. Only 14 percent of coop students report families with over $25,000 annual incomes, while 33 percent of the non-coop students so report.

Parents' Income	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Less than $5,000	2	2	1	1
$ 5,000-$ 9,999	6	3	0	0
$10,000-$14,999	10	7	4	2
$15,000-$24,999	8	9	6	4
$25,000 and over	5	12	1	6
Don't Know	5	3	2	1
Total	36	36	14	14

UOP expects its coop students to complete four semesters of work assignments. However, only 29 percent of coop graduates report having had four coop jobs. In fact, the highest percentage -- 36 percent -- report having had only one job. To what extent this reflects an inconsistency between what is expected and what is being accomplished is unknown. It has been suggested that the graduates erroneously interpreted the question as referring to the number of different employers they had.

Number of Coop Jobs	Coop Graduate
0	0
1	5
2	3
3	2
4	4
Total	14

The average hours worked per week on jobs held during college are significantly higher for coop participants, all of whom participated in the alternate plan, than for non-participants.

Work Weeks While Attending School	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Average hours/week	40	27	45	21
Total responding	22	22	14	8

The weekly incomes reported by the four groups for jobs held while attending school reflect the varying work loads, with coop students reporting the highest incomes.

Average Weekly Pay While Attending School	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
At the start	$159	$68	$147	$74
Most recently	$169	$88	$155	$86
Total responding	21	20	14	8

More important are the derived hourly rates for each of the four groups. Coop students currently earn more than non-coop students. Surprisingly, however, non-coop graduates did better money-wise at jobs in school than coop graduates.

Derived Hourly Rates While Attending School	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
At the start	$3.98	$2.52	$3.27	$3.52
Most recently	$4.22	$3.26	$3.44	$4.10

The post graduation experiences of coop and non-coop graduates can be summarized as follows:

- non-coop graduates (who are also non-engineers) are more likely (69%) to go to graduate school than are coop graduates (43%);
- coop graduates report higher starting salaries than do non-coop graduates;
- the salary differential between coop and non-coop graduates increases over time;
- eighty-three percent of coop graduates and 67 percent of non-coop graduates report job satisfaction.

Average Weekly Pay After Graduation	Non-Coop Graduate	Coop Graduate
At the start	$216	$228
Most recently	$241	$277
Total responding	9	10

The participants in the cooperative education program almost universally express favorable opinions of the program, with 89% of the students and 85% of graduates reporting either "positive" or "very positive" opinions.

Attitude Re Coop	Coop Student	Coop Graduate
Very positive	15	10
Positive	18	2
Neutral	2	1
Negative	1	1
Very negative	0	0
Don't know	1	0
Total	37	14

It is impressive to note that 100 percent of the 14 coop graduates reported they would choose to participate in the coop program again if they had it to do over.

3.2.5 Employer Perspectives

The employers participating in the UoP coop program who were interviewed were two engineering firms, a real estate development company, and a naval weapons repair firm. All have been active employers for one to three years. Three of the firms employ two to four students all year round; one firm employs two students each summer.

These companies became involved in the program after being contacted by the University's coop coordinator. One said he wanted to train students so they could be hired as permanent employees after graduation. All of the employers hire students after graduation. Three employers plan to continue hiring the same number of students in the same capacities. One employer plans to expand to include still more students.

Alternate scheduling and students returning to the same employer are favored by all companies. They feel this leads to continuity in the job experience and to the best training for future employees.

Three employers said they received no financial assistance from the university to pay students salaries; one employer declined to answer questions dealing with assistance.

The coop students are employed as engineering trainees, in three cases, and as underwriting trainees in the fourth case. Two employers say their students earn about $140 a week as engineering trainees; two employers declined to reveal salaries. None of the employers know if students receive academic credit for their work experience.

The university's coop coordinator screens students, sending them to various companies to be interviewed, sometimes at length. The students who meet company requirements are hired.

All of the employers feel that coop students perform well on their jobs. They say they are interested in learning and can be easily trained. Their potential as future employees was perceived as the main advantage to employing coop students. No disadvantages were mentioned.

The only recommendation for improvement in the coop program was a suggestion that federal subsidies be made available to pay student salaries, and thus enable more positions to be created for them.

3.2.6 Perspectives on Program and Students

Most of the students interviewed said they decided to attend Pacific's School of Engineering because of the coop program, and most agree they would do it again if they had it to do over. That kind of enthusiasm for cooperative education is also reflected among the faculty.

Almost all of the graduating students in engineering have jobs with former coop employers waiting for them. The director of the University's placement office says he had to assist only one student to find a job out of a graduating class of 20 in engineering last year. It is a generally held belief that coop students are often hired at salaries higher than those offered non-coop students.

The only complaint voiced by students concerned the high cost of out-of-town placements. The only complaint from faculty concerned the university's schedule more than coop. The schedule provides for a four-month fall semester, a one-month winter semester, and a four-month spring semester. Engineering courses, the faculty contend, simply can not be digested during the one-month winter semester.

Minor problems also exist in scheduling courses so that all students can take them in the proper sequence. These typical scheduling problems seem less bothersome at Pacific perhaps because participation in the coop program is mandatory and therefore the number of students on and off campus at any given time can be easily anticipated.

3.2.7 Future

The University of the Pacific is committed to extending the cooperative program to other parts of the school. Surveys to determine the level of faculty and student interest outside engineering have been conducted and the director of the engineering program has been assigned the responsibility of planning and implementing programs in interested departments, schools or colleges in the 1974-75 school year. He plans to first strengthen and expand already existing programs -- like the preceptor-intern program in the School of Pharmacy and the student-teacher program in Education -- similar to coop. Other departments which have expressed a high interest in the coop program are the business and political science departments.

Plans have also been made to strengthen the learning aspects of the work experience by drawing up learning objectives for each student from which written guidelines can be formulated. It is also planned to expend additional effort in the future on the placement of foreign students.

Most people agree that the engineering program will continue with or without federal funds. The university has already assumed complete responsibility for the director's salary. However, the majority seem uneasy about the prospect and anticipate some difficulty.

3.3 Pratt Institute

3.3.1 General Background

Pratt Institute is a private, coeducational university located in New York City, adjacent to the Bedford-Stuyvesant area of Brooklyn. It was founded in 1887 by industrialist Charles Pratt to serve as a vocationally-oriented training institute for artists and technicians.

Pratt has an undergraduate and graduate enrollment of over 4500 current students in five major fields: Architecture, Art and Design, Engineering, Library Science, and Science and Food Management. Tuition is high -- about $2200 a year -- especially in a city which will provide a free education in the City University network for its residents. Complete educational costs may run as high as $5500 a year.

Located next to one of the largest concentrations of blacks and Spanish-Americans in the New York City area, Pratt has recently launched a number of new programs reflecting their commitment to increasing the number of minorities in the Institute's student population. In 1971, 254, or seven percent, black students, and 89, or 2.5 percent, Spanish-surnamed students, were among Pratt's student body of 3,541.

3.3.2 Program Development

The forerunner of the Institute's cooperative education program was a work-study program begun in 1957 as a result of an agreement reached between the New York Naval Shipyards and Pratt. The U.S

Navy, hard-pressed at the time to find trained and able technicians, agreed to employ Pratt's undergraduate engineering students for half of each day. The Navy compensated the students by paying their tuition to Pratt and the students agreed to go to work for the Navy when they graduated.

The agreement with the Navy was terminated in 1962 and members of the engineering administration began in ernest to consider alternatives. In September, 1963, the Executive Committee of the School of Engineering and Science unanimously recommended that a cooperative education program be initiated. They cited two basic reasons for their recommendation. Engineering students faced a potentially shrinking job market with the decreasing emphasis on the space program. With that kind of market, students could not afford to be ill-prepared for the practical world of work, as some employers complained Pratt students were. And, students needed to be offered some way to pay for their tuition if Pratt were to continue attracting students in the wake of the expanding City College of New York.

The committee recommended that the old idea of a half-day of work and a half-day of study be abandoned and an alternate plan be installed in its place. Under the old system, the committee agreed, students tended to be working when they should have been studying and studying when they should have been working. The goals of the program were to be to provide financial aid for students and to improve the Institute's relations with industry.

The new program was planned almost entirely by the administrative officers of the department and some faculty members who were not consulted during the early stages still say they have little sense of identification with coop education today.

A director was hired in 1964 and 35 students were enrolled. The program today includes about 650 students.

In 1970, the Board of Trustees of the Institute mandated that "cooperative education to the maximum extent possible be adopted on an institute-wide basis." In 1971, the program was removed from the School of Engineering and merged with the Student Placement Office to form the new Office of Cooperative Education and Placement, under the administrative supervision of the Vice President for Academic Affairs. The program is currently open to students in all engineering disciplines, chemistry, computer science, mathematics, physics, fashion management and merchandising, food science and dietetics, advertising, fashion, industrial design and architecture.

In 1970, in conjunction with the Alfred P. Sloan Foundation, Pratt developed a financial assistance plan to aid minority students entering the coop program. A three-year pilot program was launched to attract minority students to careers in engineering. Almost 200 students have been enrolled in the program.

The Institute received its first federal funds for coop education -- $15,000 -- in FY 1971-72. It received $20,000 in FY 1972-73; $30,000 in FY 1973-74; and $50,000 in FY 1974-75. Federal funds have been used almost exclusively to expand the coop program, particularly in the area of minority recruitment. Pratt Institute itself contributes about $125,000 - $150,000 for the administration of the program each year, and, of course, previous to FY 1971-72, funded the program entirely itself. Some funds are also contributed by industry. Exxon, the Carrier Company, and RCA have all contributed money to help recruit minority engineers.

3.3.3 Present Operation of the Program

Cooperative education programs are now available to about 40 percent of Pratt's undergraduate population. Of those eligible for the program, about 50 percent elect to participate. However, participants are still largely concentrated in the School of Engineering (73 percent of 491 participants in 1972). Most of the 250 participating engineering students are minorities. Outside of engineering, there exists no firmly structured coop plan.

With the availability of the Sloan Foundation monies, the coop program has been specially targetted to minorities. A deputy coordinator for minority recruitment was added to the coop education staff. The deputy coordinator also serves as coordinator for engineering and science. Other deputy coordinators are responsible for art and architecture, food sciences, and fashion management. An administrative assistant to the coordinator and several secretaries complete the coop office staff.

Two basic approaches to the coop program are available to engineering students at Pratt. The accelerated coop program is completed in the traditional four-year time frame with the student accumulating about 70 weeks of work experience. The student must assume a heavier course load than normal in order to complete all requirements for graduation. The regular coop program is completed in five years with the students accumulating about 100 weeks of work experience during his second, third and fourth years at school. The regular program is more commonly selected by Pratt students, although, as could be expected, students tend to be restless by the time they reach their fourth and fifth years.

A student enrolls in the coop program in his freshman year even though he doesn't begin his first work assignment until the summer after his freshman year or until he has accumulated 30 credits. During that first year, the student will be counseled by the coop staff concerning career goals and expectations. During the next three years, the student will alternate one semester at work and one semester at school. During the fifth and final year, the student will spend all his time on campus.

Three other fields have a coop program similar to the one described above: food science, merchandising and fashion management, and design. In other fields, when placements arise, students are contacted and placed. This state of affairs reflects the ease with which engineering students can be placed -- there are more jobs than students available to fill them -- and the difficulty with which other students are placed.

Other departments offer varying work-study opportunities, for example the Extern Work Program in the School of Architecture which places students in work situations, related or allied to architecture, for 20 hours a week during the school year.

The coop director arranges interviews with employers for students but it is the employer who makes the final decision on who to employ.

Students may earn one credit for each work period but these credits cannot be used to meet graduation requirements. The director describes this credit as "bogus" credit. He blames the engineering department for much of the opposition to real credit for coop. Credit can be earned only if a student completes at least three of the five academic courses connected with the coop program. No tuition fee is charged for the coop courses.

About 60 different employers participate in the Pratt program, most of them located in the New York City metropolitan area and along the eastern seaboard. However, students are placed as far away as Dayton, Ohio; Oak Ridge, Tenn.; Dearborn, Mich; and Dallas, Texas. Federal employers include the Army, Navy, National Guard, NASA, the Atomic Energy Commission, and the Department of Health, Education, and Welfare (HEW). The coop staff seems to encounter no serious problems recruiting employers for students in engineering and science. Likewise, positions for students in the well-known Art and Design School are easy to obtain, as are positions for Fashion and Marketing students in New York's famous garment industry. Employers are especially anxious to hire minority students.

The coop staff encourages employers to see coop students as potential employees rather than as a ready source of cheap labor. Sometimes staff must also help employers understand they are hiring inexperienced, 18-year old youngsters unaccustomed to the world of work. Informal rather than formal arrangements are negotiated with individual employers.

Students are encouraged to stay with one employer throughout their coop career. Students seem to support the idea of consecutive employment because they believe it will net them higher salaries after graduation if they are hired by their coop employer.

Students are visited once during their coop work assignment. They will be evaluated at the end of the semester and assigned a standard letter grade based on their supervisor's evaluation of their performance and their own written report.

The minimum salary for Pratt students is $140 a week, or $123.50 if the student is working for the government. The average coop student earns $165 a week for the 26 weeks he will work a year. Students in food service usually make much less -- no more than $50 - $65 per week. A majority of the students in the coop program are able to pay all of their tuition and fees with their coop earnings. Some employers award full or partial tuition scholarships to their coop students, sometimes in exchange for an agreement binding the student to work for them after graduation (e.g., the Navy).

Financial aid is available to close the gap between coop earnings and anticipated expenses. The coop student fills out a form anticipating expenses and the amount he will be able to save from his paychecks before returning to campus after his work assignment. Aid for coop students comes from the same three basic sources as aid for any student: Pratt grants, National Direct Student Loans, and Educational Opportunity Grants. Financial aid is available to coop students during their first and final years when they are not working on the same basis. Aid for minorities through the Sloan program is also available.

3.3.4 Student Survey Findings

The students and graduates of Pratt Institute returned 103 usable questionnaires. A total of 300 were mailed.

	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate	Total
Questionnaires sent	100	100	50	50	300
Questionnaires returned	35	35	19	14	103

It is interesting to note that in terms of the racial/ethnic composition of the Pratt population, none of the graduates, either coop or non-coop, were black, whereas 20 percent of the coop students and six percent of the non-coop students were black. This suggests that recruiting efforts have been successful and that the coop program has been particularly successful in attracting minorities.

Race	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Black	7	2	0	0
White	26	26	14	8
Puerto Rican	1	3	3	0
Oriental	0	1	2	1
American Indian	0	0	0	1
Other	1	2	0	0
Total	35	34	19	10

In regards to the educational attainment of the parents of respondents, the data again suggest today's students are an upwardly mobile population. While 32 percent of the coop graduates report fathers with college experience, only 24 percent of coop students report the same.

Father's Education	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Grammar school	6	5	1	1
Some high school	10	3	7	3
Completed high school	10	13	5	3
Some college	5	2	4	0
Completed college	2	4	2	2
Graduate work/degree	1	7	0	1
Total	34	34	19	10

Mother's Education	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Grammar school	6	2	4	1
Some high school	5	6	5	1
Completed high school	16	11	8	5
Some college	5	8	0	1
Completed college	2	3	2	1
Graduate work/degree	1	4	0	1
Total	35	34	19	10

Similarly, 9 percent of today's students, both coop and non-coop participants, report coming from homes with annual incomes of less than $5,000.

Parents' Income	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Under $5,000	3	3	0	1
$ 5,000 - $ 9,999	8	6	5	1
$10,000 - $14,999	9	7	4	4
$15,000 - $24,999	9	12	4	0
$25,000 and over	3	2	0	1
Don't Know	3	4	5	2
Total	35	34	18	9

It is not surprising, given the fact that the coop program was founded in Pratt's School of Engineering and Science, that coop participants still tend, overwhelmingly, to report engineering majors. (It wasn't until 1970 that the Board of Trustees recommended an Institute-wide program.) A full 98 percent of the coop students queried said they were engineering majors; 84 percent of the coop graduates said they were engineering majors. A cluster of 17, or 49 percent of the 35, non-coop students queried, were art majors; four of the ten non-coop graduates were fashion and design majors.

Coop participants at Pratt are expected to accumulate either two or three work experiences, but more than half of the coop graduates reported they had only one coop job. Only one of a total of 19 respondents reported having had three jobs; two reported four or more jobs.

	Number of Coop Jobs	Number of Graduates
	0	0
	1	10
	2	6
	3	1
	4	2
Total		19

The in-school work experiences are quite different between the coop and non-coop groups. The average work week for coop students and graudates while they were in school was 40 - 41 hours, i.e., full-time employment, while the average work week for non-coop students was 26 hours. Non-coop graduates reported working 20 hours per week while they were in school.

Work Weeks While Attending School	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Average hours/week	41	26	40	20
Total responding	34	19	18	6

Incomes from these work activities varied considerably.

Average Weekly Pay While Attending School	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
At the start	$171	$ 98	$116	$49
Most recently	$181	$129	$149	$56
Total responding	33	9	18	9

Most importantly, the higher incomes reported by coop participants was not only a function of more hours on the job. With the exception of the salary most recently paid to non-coop students as compared to the salary for coop students, coop participants are paid higher hourly rates than non-coop participants.

Derived Hourly Rates While Attending School	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
At the start	$4.17	$3.77	$2.90	$2.45
Most recently	$4.42	$4.96	$3.72	$2.80

Post college work experiences indicate that coop graduates earn more than their non-coop counterparts, both as they start to work after graduation and as they gain more experience.

Average Weekly Pay After Graduation	Coop Graduate	Non-Coop Graduate
At the start	$225	$189
Most recently	$269	$221
Total responding	18	9

Sixty-two percent of coop graduates and 60 percent of non-coop graduates report being satisfied with their jobs.

Attitude Re Coop	Coop Student	Coop Graduate
Very positive	20	14
Positive	15	4
Total	35	19

Moreover, 100% of the coop graduates report they would enroll in coop again if they had it to do over.

3.3.5 Employer Perspectives

All employers interviewed, both active (three) and inactive (two), were engineering firms. The active companies employ from three to twelve coop students and have been participating in the program from one and half to three years. Each of the inactive companies employed three students per year of involvement.

The various companies became involved with the coop program as a result of being approached by Pratt Institute's coop coordinator.

The employers feel the students can be trained to meet their companies' individual needs. If the students perform well and seem satisfied with the company, all employers agreed they would offer them full-time positions after graduation.

In the future, the majority of the employers plan to continue the coop program and expand it to include more students in a wider variety of positions. One inactive employer discontinued the program because of the failing economy. The other company has grown and doesn't have space for coop student employees right now. Both hope they will be able to resume the coop program sometime in the future.

All employers prefer students to return to the same employer throughout their coop career. The majority of the employers also prefer alternate scheduling. They feel this provides a continuity of experience and training, and leads to increased responsibility and professional ability. One inactive employer professed no preference in scheduling; the company has openings for both part-time and full-time coop student employees. One inactive employer said work periods were too short.

Pratt Institute provides no financial assistance to companies employing coop students. The majority of the employers pay coop students salaries ranging from $156 a week to $200 a week for positions as engineering aides and trainees. Two employers, one active and one inactive, would not divulge the salaries they paid students. All three active employers said they did not believe students were awarded credit for their work experience. The inactive employers said students receive credit but they did not know how much.

Four companies designate someone to be a coop coordinator and collaborate with the Pratt Institute coop coordinator in all aspects of the program. The school coordinator screens students and routes them to companies according to their qualifications. The company coordinators then interview the students and hire those who meet the companies' needs. One inactive employer requires students to apply for positions through regular company channels. They are considered for employment on the same basis as non-coop applicants.

That the students are highly motivated and perform in an above average capacity was the opinion of four out of five of the coop employers. One inactive employer felt that students were bright, motivated and very willing to learn, but as trainees they could not be given much responsibility and required a great deal of supervision.

The advantages of the coop program for employers were it resulted in good public relations and served as a good source for future qualified personnel. One inactive employer complained that Pratt students live too far away to be considered as future company employees.

All of the employers encourage their full-time, non-student employees to further their education, and offer a tuition refund program. One active employer runs a fully-acredited night school for employees on company premises.

Some recommendations for improvement of the coop program were offered: all students should receive academic credit for work experience; jobs should relate to the students' academic major; students should be familiarized with their jobs in advance; more students should stick with the same employer.

3.3.6 Perspectives on Program and Students

The cooperative education program is important to Pratt Institute because it is one way they have to draw prospective students away from the much less expensive institutions around them. Some people feel, in fact, that if Pratt had not had coop education during the late sixties when students all over the country turned away from careers in engineering, the engineering department would have had to be eliminated. The director of admissions at Pratt sees coop education as a unique "selling point", particularly in economically troubled times. Obviously, many of the minority group members Pratt seeks to draw through its doors could never hope to attend such a high-cost institution without the financial backing provided by the coop program and other aid sources.

Especially important for minorities, the coop experience also tends to strengthen and expand a student's desire for upward mobility.

Despite these factors, much opposition to the coop program still exists among the faculty. Much of the opposition may stem from the early association of the program with an unpopular dean. Faculty also complain they are overworked as the private school's budget is pulled taut and coop compounds the problem. Some faculty base their objections on the fact that cooping students often are forced to take courses out of their natural academic sequence. This, they argue, is harmful to the student's intellectual development. Because students are away from the campus cooping, enrollment will be small in some classes. In fact, a member of the engineering faculty was recently assigned to be liaison between the department and the coop education office when nobody signed up for a course she was offering and she was not needed to teach.

Some people see the coop education office in conflict with the faculty over control of a student's academic life. The coop director and his staff do not enjoy faculty status and some faculty do not consider them capable of counseling, arranging the best schedule for a student, etc. The coop director would like to see members of the faculty as coordinators and the director designated a dean. Otherwise he fears his position will be reduced to little more than a placement officer.

It is the counseling -- the one-to-one relationship with students -- that he sees as important. The current director has an M.A. in counseling. The director says he is having a difficult time arranging for credit to be granted for a pre-coop course he would like to offer dealing with such things as resumes, interviews, housing, etc. He says the faculty will allow him to grant credit only if one of them teaches it. The director feels he is better qualified to teach it.

There currently exists no formal mechanism for facilitating faculty input in the program. The recent assignment of a faculty member from the engineering department to serve as a liaison with the coop program will hopefully improve communications. (The liaison is also interested in developing opportunities for faculty coop.)

Likewise, there is no formal mechanism for student or employer input.

Plans for expansion center around photography, architecture, industrial design, graphics, communications, and film-making, and advertising, although because of the current job crunch, the director anticipates a rough road ahead.

Despite the efforts of the coop staff, students complain about irrelevant jobs. Some students also say they can make more money in other jobs, outside the coop program. Most coop students, however, tend to rate experience as more important than money.

3.3.7 Future

Pratt Institute wants to extend its coop program to more students in more departments. The president of Pratt talks of including the entire Institute in the program. Two developments could facilitate the growth of the program: the granting of credit for the coop experience and the adoption of true trimester scheduling.

The faculty is reluctant to grant credit for the coop experience. They seem to be concerned especially with the issue of evaluation, i.e., how to evaluate the student's performance on the job. All the students interviewed, however, spoke out in favor of credit for work assignments.

Pratt's current trimesters consist of 18-week winter and spring semesters. Few courses are offered during the short summer semester. Important core courses are not scheduled in the summer. Students who work during the winter and spring semester, therefore, are faced with an unattractive summer schedule. The president of Pratt foresees many scheduling problems being solved by the adoption of the true trimester system, i.e., three terms of equal length. Equal terms should also benefit employers, who will be then able to count on all students staying the same amount of time.

A proposal has been advanced by the engineering department for coop experiences for faculty to provide for professional advancement.

The coop program at Pratt was instituted before the availability of federal funding, and so would likely continue if federal funds were no longer available. However, most people agree it would then have little chance to grow and, in fact, might shrink to its original limited size.

3.4 Pasadena City College

3.4.1 General Background

Pasadena City College, as it is constituted today, is the descendant of the two-year college program begun in Pasadena High School in 1924 and 1925. The high school program was supplanted in 1928 by Pasadena Junior College, offering instruction in grades 11 through 14. A second four-year junior college -- John Muir Junior College -- was added in 1946. The two colleges were merged and assigned responsibility for grades 13 and 14 exclusively in 1953-54.

Pasadena City College today serves the communities represented by six unified school districts in the Pasadena Area Community College District. No tuition, registration, or laboratory fees are charged to residents of these six districts, which encompass both very poor and very well-to-do neighborhoods. Anyone may be admitted. About 16,000 students presently attend classes, both at day and at night, full and part-time. About 300 faculty teach full-time; another 300 teach part-time.

The College provides four basic kinds of educational services: general education; occupational education, to prepare a student for immediate entrance into an occupation after graduation; college transfer and pre-professional education, to provide the student with the first two years of liberal arts or professional education; and continuing education. The bulk of the college's energies are concentrated on occupational education.

Almost 30 percent of the student population come from poverty-level families (less than $7,500 annual income). In 1972, the college projected an enrollment of 16,000 students, including 1727, or 10 percent, blacks, 1229, or seven percent, Spanish-surnamed individuals, and 66 American-Indians.

3.4.2 Program Development

Pasadena City College has been involved in some kind of work study program since the 1940's. In addition to its original work-study program, Pasadena has also, from time to time, negotiated bilateral agreements with individual firms providing for the placement of its students.

Several factors combined to force these early programs to end during the 1960's. In 1963, the State of California re-structured its college funding mechanism, effectively discontinuing funding for students enrolled in the work-study program. Programs placing students on alternate semesters in private firms dried up when young men out-of-school were threatened by the draft. Other programs with private firms ended when government contracts were terminated or re-negotiated to eliminate the need for part-time student workers.

With the recent availability of federal funds for both work-study and cooperative education programs, interest in these programs was rejuvenated. At about the same time, California again re-structured its college funding mechanism, again allowing funding for students on work assignments, although at a lower level than previously. A third factor also affected the level of interest in cooperative education: the rising number of students with non-traditional academic qualifications being admitted and requiring special programs to meet their unique needs.

From the beginning, Pasadena emphasized the affective rather than cognitive aspects of the coop program. The Northeastern model was rejected and the idea that any kind of work can contribute to the comprehensive development of the student and his personality was adopted. The first director was especially concerned with minority students. The original program was placed in the department of occupational education, but relationships with other departments suffered, and so it was relocated administratively under the Dean of Personnel Services, the most influential dean on campus because of his wide-ranging authority.

A $25,000 grant for cooperative education was first awarded Pasadena in 1970-71, enabling PCC to hire a director and enroll 30 students in the program. All 30 were already enrolled in the work-study program, which had received earlier funding, and all 30 were working as teachers' aides. Both the work-study and coop education programs were administered by the financial aid office. Both programs were particularly aimed at the school's minority population.

In 1971-72, the coop program received a $19,000 federal grant; in 1972-73, a $25,000 grant; in 1973-74, a $45,000 grant; and in 1974-75, a $45,000 grant and a special $10,000 training grant to conduct two two-day workshops to acquaint the school's counseling staff with the coop education concept, and two two-day workshops to train other community college personnel charged with planning and developing coop programs.

The federal government also provided aid in the early days of the program in the form of a consultant dispatched to help Pasadena develop its program.

In 1971-72, the coop program expanded to include almost 500 students. In 1972-73, there were almost 800 students; in 1973-74, 1600 students. And, currently, there are 2300 students.

Of the 738 cooperative education students enrolled in 1972, 131, or 18 percent, were black; 98, or 13 percent, were Spanish-surnamed individuals; and three were American-Indians.

In 1973-74, the cooperative education program was severed from the financial aid office and merged with the placement office. A director heads the nascent Office of Cooperative Education and Placement, assisted for the first time by two supervising teachers for cooperative education and a placement counselor, in addition to several clerical workers.

3.4.3 Present Operation of the Program

All but about a half dozen students currently enrolled in the cooperative education program are following the parallel plan. Two types of cooperative education are available:

(a) Occupational Work Experience Education - the extension of occupational and learning opportunities and career awareness for students through employment in occupational fields for which their college programs or majors are designed.

(b) General Work Experience Education - supervised employment of students with the intent of assisting them to acquire desirable work habits, attitudes and career awareness in jobs which need not be related to their occupational goals or college programs.

Students on the parallel plan are full-time students at the college. The cooperative program is operative only during the regular academic year and not during the two six-week summer sessions. The other six or seven students participate in the program under the alternate plan, alternating a semester at work with a semester in the classroom.

Students receive one credit per semester for each five hours they work per week. Students on the parallel plan may earn up to four credits per semester for 20 hours of work per week. Students on the alternate plan earn eight credits for 40 hours of work per week. The maximum number of coop credits to be allowed each student is determined by his department but no department may allow more than 16 coop credits.

Credit earned through the coop program is not accepted by the University of California when PCC students transfer there.

Students are supervised during their work assignments by one of 54 coop teachers who meet with the student on campus twice each semester and with the employer at the job site once each semester. Coop teachers are responsible for supervising about 40 to 50 students in a variety of fields not necessarily related to the teacher's expertise. The teachers are paid $1000, the same rate as a part-time instructor teaching a course. However, many of them are full-time members of the Pasadena faculty "moonlighting" in the coop program. One vice president is worried the coop program is becoming a "dump", a place where poor teachers who can't attract students can always go for a job. A waiting list exists of teachers hoping to be hired by the coop program.

Students receive grades of credit or no credit based on an evaluation form completed by the job supervisor, the two interviews with the coop teacher, and a five page report written by the student at the end of his work experience.

An unrequired coop-related course was offered for the first time in 1973-74. The one-credit class meets once a week and offers guidance in career preparation.

Little recruiting of students takes place because the program is considered to be at optimum size now. Initial recruiting was done with the usual tools of posters, flyers, radio and TV announcements, etc.

Social science majors constitute the bulk of program participants, with most of the remaining students majoring in fine arts/humanities and the natural sciences.

Recruiting of employers is not an issue at Pasadena because almost all of the students come to the program with a job already found. About 80 percent of the College's population works while attending school, and so for many the coop program is a way of getting credit for something they would be doing anyway. Most of the jobs -- one person estimates 70 percent; others say it's even more -- are unrelated to the student's major or career goals -- box boy, dishwasher, furniture mover, service station attendant, etc. -- although some campus personnel insist the emphasis is on studies-related positions. One frequently mentioned case involved a coop student earning credit for her hours spent as a go-go dancer. Students may receive credit for paying and non-paying or voluntary positions. Students in paying positions typically earn $2 - $3 starting wage.

Despite the fact PCC charges no tuition, financial aid is often required and the coop program is considered part of the financial aid package. Fifty to sixty percent of the student body are self-supporting and, as previously mentioned, 30 percent are from poverty-level families. Although some faculty insist coop enables students to pay their own way, it seems highly unlikely if indeed they are earning $2 - 3 an hour and working 15 to 20 hours a week. A limited number of scholarships and the full range of federally-sponsored loan and grant programs are available to supplement coop earnings.

About two-thirds of the students participating in the College's work-study program receive credit for their experience under the aegis of the coop education program. Students may also receive credit for work experience through the various field work or practicum requirements presently existing in many departments. A $3 million program is conducted by the Director of Occupational Education requiring field work related to a student's academic work. In this program, some students are paid and some are not.

The current director has a B. A. in vocational education and 15 years experience as a machinist. He is currently pursuing both his M. A. and his Ph. D. He describes himself as a "political animal" and he has apparently spent considerable time winning friends for the program among faculty and the school's board of trustees, of which he is a member. Nonetheless, he has certainly not been successful at defusing all opposition to the coop program. It was he who initiated the idea of enrolling students who already had jobs in the coop program.

Most of the funds for the coop program do not come from Washington but from Sacramento. Credits being earned through work experience are included when computing the average daily attendance (ADA) at Pasadena, a figure which determines the level of state subsidy ($1,100 is allotted per semester per student). The coop program can be accredited with helping to keep the ADA at a maximum level not only by extending credit to every day work experiences but also by enabling students to stay in school even though they must earn a living at the same time. The College allots more than $100,000 of its budget to the coop program.

3.4.4 Student Survey Findings

Of a total of 300 questionnaires mailed to students and graduates of Pasadena City College, 70, or 23%, were returned.

	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate	Total
Questionnaires sent	100	100	50	50	300
Questionnaires returned	16	21	17	18	70

The racial/ethnic composition of all categories of respondents is predominantly white, although PCC projected a 10 percent black and a seven percent Spanish-surnamed enrollment for the 1972 school year. Of the 738 cooperative education students enrolled in 1972, 18 percent were black and 13 percent were Spanish-surnamed.

Race	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Black	0	1	2	0
White	13	18	13	14
Chicano	1	0	0	1
Puerto Rican	1	0	0	0
Oriental	1	1	1	0
American Indian	0	1	0	1
Other	0	0	0	1
Total	16	21	16	17

About 50 percent of coop and non-coop students, as well as coop graduates, report having fathers with some college experience. Twelve of 17 non-coop graduates report having fathers with some college experience. The reported mothers' educational backgrounds closely parallel the fathers'.

Father's Education	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Grammar School	1	5	1	0
Some High School	2	1	6	1
Completed High School	4	5	0	3
Some College	5	4	3	5
Comp. College	2	2	2	4
Grad. work/degree	1	3	3	4
Total	15	20	15	17

Mother's Education	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Grammar School	1	1	1	1
Some High School	2	2	4	1
Completed High School	4	6	5	8
Some College	6	3	3	4
Comp. College	1	5	0	4
Grad. work/degree	2	4	2	0
Total	16	21	15	18

The economic status of the parents of respondents does not seem to be dictated by any discernible pattern: more non-coop students report families earning less than $10,000 annually than coop students, although more coop graduates so report than non-coop graduates.

Parents' Income	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Less than $5,000	1	0	2	1
$ 5,000- 9,999	1	4	2	2
$10,000-14,999	3	6	3	2
$15,000-24,999	4	4	6	4
$25,000 and over	2	2	1	5
Don't know	5	4	1	4
Total	16	20	15	18

No pattern can be discerned when it comes to majors either. No clusters of one major or another were peculiar to any group.

Because most students at Pasadena come to the coop program with a job already in hand -- usually a part-time position they will maintain throughout their two years in school -- it is not surprising that coop graduates report having had one coop job.

Number of Coop jobs	Coop Graduate
0	0
1	13
2	3
3	1
Total responding	17

Although the difference is not great, non-coop participants report working longer average work weeks during their college careers than coop participants. This may be explained by the fact that the sample of non-coop participants is likely to include part-time students who would be more likely to be working 40-hour weeks than full-time students. Since coop participants must be full-time students, the majority hold part-time positions.

Work Weeks While Attending School	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Average hours/week	22	30	22	27
Total responding	12	15	16	13

The weekly earnings reported are higher among non-coop participants than among their coop counterparts, again reflecting the longer average work weeks.

Average Weekly Pay While Attending School	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
At the start	$65	$ 74	$60	$65
Most recently	$75	$107	$71	$86
Total responding	9	13	15	15

Very few of the graduate respondents report attending graduate school (three of the 18 non-coop graduates and one of the 17 coop graduates).

The after school work experiences of the two graduate groups are not dissimilar, with coop graduates reporting slightly higher starting salaries and non-coop graduates reporting slightly higher current incomes.

Average Weekly Pay After Graduation	Coop Graduate	Non-Coop Graduate
At the start	$117	$107
Most recently	$136	$136
Total responding	7	7

Job satisfaction is lower among the graduate respondents from Pasadena City College than it is for most schools. Twenty-seven percent of the coop graduates and 36 percent of the non-coop graduates say they are satisfied with their jobs.

Attitudes concerning cooperative education are predominantly positive, although it is interesting to note that the percentage of positive responses is lower among coop graduates than among other categories of respondents; 70 percent of coop graduates still have positive attitudes, however.

Attitude Re Coop	**Coop Student**	**Non-Coop Student**	Coop Graduate	**Non-Coop** Graduate
Very positive	10	0	3	1
Positive	3	6	9	4
Neutral	2	0	2	0
Negative	0	0	2	1
Very negative	1	0	0	0
Don't know	0	0	1	1
Total	16	6	17	6

The one coop student with "very negative" feelings about coop education was embittered after learning credits earned through the coop program could not be transferred to a four-year institution he hoped to attend.

3.4.5 Employer Perspectives

Contact was made with three employers of coop students from Pasadena City College. The employers, all active, were a pharmaceutical manufacturer, the Veterans Administration, and a lumber-sales firm. Together they employ a total of seven coop students. They have been actively involved in the coop program between one and three years. (PCC has no records of past or inactive employers.)

Two employers said they did not know how they became involved in the coop program. The third wrote letters to PCC announcing the availability of positions; the students actually hired were not referred by the school's coop office, however.

Future involvement in the program is anticipated by all, even though the Veterans Administration currently relies on Civil Service lists, not the school, for its potential coops. If students are successful as coops, employers are eager to hire them after graduation. Two actually prefer hiring former coop students, rather than other new employees, because the students are already familiar with the company. Indeed, two of the employers have already hired former coop students.

The lumber-sales company preferred the alternate schedule because part-time employees have proven to be less dependable than full-time workers. In addition, the company says it does not have the time to train part-time people. Parallel scheduling works best for the other two employers, who like students to see the immediate relevance of their work to school, and vice-versa.

No employer receives financial assistance from PCC to pay the salaries of coop students. Two companies have individuals within their personnel department to supervise the students. Salaries for coop students range from $2.45 an hour to $8,000-plus a year. Coop positions include sales clerk, veterans representative on campus, drug compounders and packagers, custodians, lab technicians, and mechanical maintenance workers.

Two of the employers do not know if academic credit is received for the coop experience. The third hires students from several schools and is not sure which schools give credit. Screening for a job involves an application and an interview with one employer. The Verterans Administration relies solely on Civil Service lists and ratings to choose employees.

As workers, students are regarded as highly motivated and competent. The only criticism was that they may be overworked at times. Some try to study while on the job, particularly if they work the night shift.

Both the Veterans Administration and the pharmaceutical manufacturer encourage non-coop employees to seek further education. The Veterans Administration offers courses on its premises for which various colleges award credit. The latter does not accept new employees from the coop program at PCC. The pharmaceutical manufacturer encourages employees to participate in the PCC cooperative education program.

Employers perceive no real advantages to the coop program except recruitment and training. None mentioned any disadvantages. The only suggestion for improvement offered was that the coop program be publicized more so that it might attract a larger number of students.

3.4.6 Perspectives on Program and Students

Administration and faculty at Pasadena City College sometimes differ sharply on the efficacy of the cooperative education program. The debate often centers around the issue of whether work must be related to a student's studies to be beneficial.

On the one side are the faculty who warn that giving credit for sweeping floors, bagging groceries, and carrying messages can only hurt the reputation of the school as an academic institution. One member of the faculty told interviewers that students have no respect for the program, and comments some students made during interviews support her thesis. One student said, "I don't have to do anything. It will make no changes at all in my life. It's helping me get back into the swing of school and get the G.I. bill without having to take too many courses." Another student said, "I already have a job. The coop program didn't really help me. It was just an easy three units per semester."

A member of the program staff commented, "Coop ed has grown because it is an easy way of obtaining credits, not because it is an exciting program." These opinions are balanced by faculty who insist that, given the right attitude, any situation can be a learning situation. One instructor cautions that the school needs to be realistic about students' needs. The majority of Pasadena students must work anyway, he says, and the coop program provides the vehicle by which they can get needed counseling along the way. This teacher says he encourages his students to seek jobs relevant to their studies. How many teachers see this as one of their responsibilities is unknown.

Other faculty contend that the coop program affords the only opportunity for close student-faculty relationships. Other supporters of the program contend opposition comes primarily from teachers facing dwindling enrollment in their classes because of the competition from coop education. The coop director's reply to this is "make your program relevant." Dwindling enrollment has been checked somewhat by requiring students to take two courses instead of the one originally required in order to qualify as a full-time student while cooping.

In addition to those people who oppose giving credit for menial employment are those people who criticize the program because they say it is poorly and inefficiently managed. One of the strongest critics is a senior member of the program staff who recently submitted a five-page detailed memo outlining his complaints, and offering suggestions for improvement. He was especially critical of the program's lack of goals and objectives. The program director readily admits he has formulated no goals. He frankly describes the initial approach as "backwards," but defends this by saying some schools spend so much time formulating goals, they have little time to accomplish anything, while his program has clearly accomplished something without goals. The memo also dealt with the need for: a statement of program philosophy; planning based on the philosophy; weekly staff meetings and monthly teachers' meetings for the purposes of training and orientation; the performance of more placement duties; a mechanism for the evaluation of the program; a clear definition of various job titles; and an active coop advisory board.

3.4.7 Future Plans

With over 2,000 participating students, the cooperative education program is about as big as most people think the present staff can handle. However, some suggestions for program improvements have been made, although no reforms seem imminent. For example, the president of the college would like to see more students on the alternate plan. He would also like to see the program meet the special needs of older students returning to school seeking second careers. The suggestions of a member of the program staff were discussed above.

Pasadena's program seems in no jeopardy if federal funds are eliminated since over two-thirds of its budget is state funds.

3.5 Alice Lloyd College -- Pippa Passes, Kentucky

3.5.1 General Background

Alice Lloyd College is a private, two-year, liberal arts college, founded shortly after the turn of the century by Alice Lloyd of Boston to serve the economically and educationally disadvantaged population of Appalachia. It is situated on the banks of Caney Creek, in one of the "hollers" of the Kentucky mountains. College regulations require at least 80 percent of the student population to be drawn from the southern Appalachian region. About 190 students now attend ALC, although the college has a capacity for up to 400 students. Enrollment has declined as new community colleges have cropped up across Kentucky. In addition, the now-booming coal industry has lucrative jobs to offer which seem more rewarding than being a student. The mines now offer up to $50 - $60 a day.

Academic programs are offered in four major areas: math and science; the humanities; social sciences; and fine arts. The goal of the programs is to prepare students to transfer to a four-year senior institution and administrators at Alice Lloyd say about 80-90 percent of their students do so. However, recently, the college committed itself to the introduction of terminal degree programs in several technical areas. Already, a two-year terminal degree in mental health technology is being offered, as a result of a four-year grant from the National Institute of Mental Health (NIMH). A secretarial program is in the works.

Although tuition at Alice Lloyd is $1600 per year, no student is expected to pay it. Unemployment figures in the area surrounding the campus often climb as high as 20-25 percent. Many people travel to Ohio to find work, returning to the hills each weekend. Over 80 percent of the student body were members of families with annual incomes under $9000 in 1971-72. Only seven percent come from families with over $12,000 annual incomes. Consequently, over 80 percent of the student body receives full financial aid packages. Every student is currently receiving some degree of aid. In return, every student is required to work at least five hours per week for the school -- cooking in the dining hall, cleaning dormitories and classrooms, maintaining the grounds.

Administrators say the traditional provincialism of students is disappearing -- they aren't hillbillies anymore -- under the influence of television and the expanding highways network.

3.5.2 Program Development

The idea of combining work with studies has been firmly entrenched at Alice Lloyd College since its very beginnings. Perhaps some indication of the status that work experience enjoys at ALC is that the director of work-related programs all report to the Academic Dean. Administrators at the college first came in contact with the idea of cooperative education in the late 1960's when, together with Lees Junior College, they invited a director of a coop program at another college to speak at their schools. The people at Alice Lloyd and Lees saw coop as one way to get their students out of the hills and into areas promising greater occupational opportunities, a way to facilitate an "interchange" with a larger society.

Alice Lloyd, Lees and four other area colleges formed a consortium for the purpose of stretching limited funds to the greater benefit of all. They received their first federal grant in 1969. A single director was engaged to oversee the program for all six schools.

The idea of the consortium was soon abandoned, however, along with the conception of the program as a way of weaning students away from the hills. The consortium fell to rising costs. The idea of sending students out of the region fell to a depressed economy and the young people's attachment to their homes. Their natural attachment to family and friends was augmented at about this time by an awakening of Appalachian pride spurred on by several federally-funded, local self-help projects, which, of course, offered additional, and because of the attitudes of students, attractive job prospects. Alice Lloyd itself was the initiator of several of these self-help projects.

When the consortium disbanded, Alice Lloyd decided to continue the coop program itself and appointed its own director. It also adopted a new focus for the program in keeping with its newly articulated commitment to the Appalachian way-of-life, in general, and specifically to train Appalachian leaders for Appalachian people. The goal of the new program would be to provide an off-campus, but not necessarily out-of-state, work experience, relevant to both the student's and the community's needs.

Today, the specific objective of the Alice Lloyd program is "leadership education and service"; general objectives are "on-the-job experience in line with career goals", alternating work and study periods, "opening up new avenues of career pursuit", and facilitating contact with potential future employees. The slogan applied to all work-related programs is "Leadership Education for Service is What It's All About."

3.5.3 Present Operation of the Program

Alice Lloyd's schedule provides for three 16-week semesters, each semester divided into three terms. During the summer, no formal classes are scheduled in order to allow -- in fact, to encourage -- students to work under the auspices of any one of several work-study, coop-related programs.

It is difficult to disentangle the complicated web which has been weaved from this package of diverse programs all providing for more or less the same thing, that is the working student. The cooperative program provides the vehicle for awarding credit to a student formally carried on the rolls of the work-study program. Work-study funds provide the paycheck for a coop student working in the college's summer theater project. The mental health program assumes responsibility for finding its own students jobs; almost all the jobs are connected with an independent offshoot of a college-related program. Each program, in some way, seems to support the others.

What it is possible to say with some clarity is that almost all of the students at Alice Lloyd work during the summer within the confines of the southern Appalachian region. Most students work in some college-sponsored endeavor or in ALCOR, Inc., the independent offshoot of Family Horizons, a program founded in 1965 with funds from the Office of Economic Opportunity at Alice Lloyd College. Some of the students who work -- about 30 to 40 -- are formally enrolled in the coop program, although, because of the interdependence of the programs a supervisor often does not know who are and are not coop students. The director of the summer theater project, for example, said he had 15 students working for him last year. It was only the following fall that he learned eight of them were officially coop students. Some of the students who work under the auspices of the coop program are paid at least in part with work-study funds. These are the students who work in college-sponsored endeavors.

A handful of students -- no more than 10 or 12 -- also work during the regular academic year under the auspices of the coop program.

Students who are enrolled in mental health, education and economic aid programs are required to coop. The coop program for other students is optional. Students may receive from one to six credits for work experiences ranging from 4 to 12 weeks. However, most students do not elect to receive credit because if they do, they are required to pay $25 for each credit earned, and $15 additional fees.

The director of the mental health program supervises his own coop students, requiring them to meet with him twice monthly to discuss any problems they may be having. Once they have completed their coop experience, students are required to give an oral report before a social work class.

The director has found students have been unprepared for job interviews and plans in the future to provide some additional guidance for them.

All other students are supervised by the director of the coop program, who is also director of guidance, special services and community and supportive services. The present director is a graduate of Alice Lloyd, with an M.A. in education. He visits students on the job "frequently".

Since the only industry in southern Appalachia is coal mining, it is natural that most jobs open to students are service or education-oriented. In contrast to what most other colleges have found, it is the science or technology students who are most difficult to place at Alice Lloyd. Most jobs are with the ALCOR program. ALCOR is a private corporation, funded almost entirely by charitable grants from private foundations, which has contracted with Alice Lloyd, Lees, and the four other schools in the original coop consortium, to use students each summer to help bridge the gap between isolated mountain communities and state and county social service agencies. A team of two students -- usually a student who will enroll at one of the colleges in the fall together with a student who has completed at least one semester of work -- are stationed in each community. They live at home or find lodgings in the home of one of the local citizens and they usually find office space in the local school house. They are paid about $15 per day to perform a wide range of duties depending on the needs of the community. For example, a park was built by one community; a book drive was conducted for another. They are supervised by the ALCOR director and three program assistants. During the summer of 1974, 24 ALC students worked for ALCOR.

Most campus-related jobs are found with one of two programs: the Appalachian Learning Laboratory and Upward Bound. The Learning Laboratory is made up of many components, including a photographic archives, a summer theater program which mounts plays in isolated mountain communities, a program entitled Man and His Environment wh[illegible] seeks to recreate small village life at the turn of the century, and the Oral History program which seeks to compile the oral history of southern Appalachia. The Learning Laboratory is funded by the National Endowment of the Humanities. Students perform a variety of tasks in the lab. The Upward Bound program brings high school students to live on the Alice Lloyd campus for eight weeks each summer for a program of cultural awareness. Coop students work as academic tutors and residential counselors in the dormitories. Many of the coop counselors are former Upward Bound participants themselves. According to the director of Upward Bound, it offers coop students a chance to test their leadership skills.

Students can find other employment on the campus, too, including employment with the coop program itself, serving as student aides assigned the responsibility of keeping in touch with students off-campus, whether with ALCOR or other employees. Other employment is available in day care centers, community mental health centers, centers for the training of mentally-retarded children, and other local social service agencies. The director of the mental health technology program is responsible for placing his own students in jobs. In summer, 1974, he placed seven students with ALCOR and five in social service agencies unrelated to the campus, such as the Upper Kentucky Mental Health Program in Hazard,which serves eight counties.

Students working in campus programs are paid with work-study funds. If a student lives at home while attending school, 20 percent of his salary is deducted to meet college expenses; if he lives on campus, 40 percent is deducted.

Some faculty members are actively involved in counselling students during and prior to their work experiences. These faculty seem enthusiastic about the work programs; other faculty, according to some administrators, are apathetic. To offset this the academic dean proposes to assign all faculty to spend one-fifth of their time on some work-related program. Only one faculty member interviewed expressed a negative opinion -- although not very negative -- of the program.

3.5.4 Student Survey Findings

The mail survey conducted at Alice Lloyd encountered two problems:

- records were poor; when combined with the small student population, a small sample resulted;
- only 10 percent of coop participants returned questionnaires.

	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate	Total
Questionnaires mailed	62	97	25	25	209
Questionnaires returned	6	23	2	10	41

Conventional quantitative analysis is therefore inappropriate.

3.5.5 Employer Perspectives

Employers participating in the Alice Lloyd program who were interviewed were a mental health agency, a community action agency and a youth services agency, all active employers; and a school for mentally retarded children and an insurance company, both inactive employers. The mental health agency currently employs six coop students; the two other active employers hire coop students only during the summer. The active employers have participated in the coop program for a period of two and a half to eight years. The two inactive employers have employed ten students and three students, participating in the program for two to three years.

All of the employers became involved in the program after they were approached by Alice Lloyd's coop coordinator. The majority of the employers felt the program was a good source of temporary, qualified, but low-cost manpower. They also felt participation in the coop program was a good way to enable low-income students to further their education. An executive of the insurance firm, an inactive employer, is on the board of directors of Alice Lloyd College and this led to this company's involvement in the coop program. Both of the inactive employers said the college stopped sending students to them. These companies don't plan to resume their participation in the future. All of the active employers plan to continue their participation, and would like financial assistance to enable them to expand their programs.

Two employers, one active and one inactive, will offer coop students full-time positions after graduation if the students' job performance is satisfactory. One active employer offers students temporary employment after graduation until they are able to find full-time employment. The other two employers say they don't hire their coop graduates.

Students returning to the same employer for each of their work terms and alternate term scheduling is preferred by all employers. They feel this combination is the most effective for both the company and the student. Students working full-time are more reliable and can be given greater responsibilities with each successive work term.

Alice Lloyd College pays either all or a percentage of the students' salaries at three active companies; the money goes directly to the students. The students work as tutors, recreation counselors, teacher-aides, attendant-nurses, and general clerical help, and receive $84 to $130 per week. One inactive employer, the insurance company, declined to state a salary. Two employers, one active and one inactive, said they thought students received academic credit for their work experience, but they didn't know how much. Two other employers, one active and one inactive, didn't know if students receive academic credit. The remaining active employer said he thought students receive no academic credit.

Two active employers designate coordinators to work with Alice Lloyd's coop coordinator. In almost all cases, the school coordinator screens students, and the company then hires who they are sent. One active employer requires students to answer a newspaper ad and be considered along with non-student applicants. One inactive employer requires applications and interviews, and hires only students they themselves feel are qualified.

Most of the employers feel very positively about coop students as employees. They feel students are high caliber, qualified people. One active employer feels students are excellent workers, but they need close supervision to keep them from getting lax in their duties.

The advantages of employing coop students as seen by employers of Alice Lloyd students are: students represent qualified manpower; they provide the company with new ideas; and in turn receive practical training and experience. The disadvantages include work periods that are too short, personal adjustment problems and placement problems.

Two of the employers encourage their full-time non-student employees to further their education, but offer no financial assistance. The other employers neither encourage nor discourage further education.

The employers offered several suggestions for improving the coop program: the program should be better supervised; students should know in advance what jobs are available and what to expect; more government money should be provided to expand the coop program.

3.5.6 Perspectives on Program and Students

It seems many administrators on campus lament the passing of the idea of placing students in jobs outside southern Appalachia. Early in the program, a few students were placed as far away as California, Massachusetts and New York. And, although the problem of finding jobs is, of course, acute, a more crucial factor in the decision to not seek such far away placements is the attitude of the students themselves and their families. Girls especially are expected to stick close to home. The new academic dean at Alice Lloyd seems particularly anxious to re-evaluate policy in regards to out-of-state placements. "Students need to see more of the world than just the holler," he comments. He wants special monies allocated to make out-of-state placements economically feasible.

The jobs provided Alice Lloyd students may or may not be career-oriented. All the programs are more concerned with service to the community than to career-related work experiences. For example, a math student may find employment in the summer theater program, although it is also true drama majors are required to work in the theater. The only students for whom career-related positions are sought are mental health technology students.

Many people see coop students as more mature than their contemporaries. The director of the Upward Bound program, for example, says his coop counselors are more mature than other student-counselors. However, most people see their maturity as a factor of something other than the coop program, the assumption being that mature students seek out the coop program, rather than that they become mature as a result of the program.

3.5.7 Future

An evaluation of the coop program is planned. It will include post-tests of participants in personality, interests, and aptitudes.

ALC is currently looking at a number of different approaches to attracting more students to its campus in an attempt to reach its maximum capacity of 400. One of the approaches already adopted provides for the implementation of two-year terminal degree programs in various technical areas. A new program in business and office management is planned, in addition to the program in mental health technology already underway. Although the coop program could be expected to grow as the result of any new program which attracts more students to campus, the proposed technology programs have a special implication for coop education. Coop education, it is anticipated, will be an integral part of any technical curriculum.

Several recommendations for improving the program were offered by people in varying positions: (1) jobs need to be more directly related to the students' majors; (2) students need to be oriented to the peculiarities of organizational structures and behavior; (3) students should receive academic credit for their work experiences without having to pay for tuition.

Work-study and coop programs at Alice Lloyd will not die if federal funds are withdrawn; they have been part of the school's philosophy for too long. The names of the programs may change as funding sources vary; goals may be re-evaluated and some other administrative mechanism adopted. Students will still go to work, just as they always have.

3.6 Lees Junior College -- Jackson, Kentucky

3.6.1 General Background

Lees Junior College is a private, two-year, community-oriented college serving the disadvantaged population in the Appalachian highlands of eastern Kentucky. Total enrollment in the school is about 350. Enrollment has been decreasing recently.

The area surrounding Lees suffers from all the ailments of Appalachia in general: few job opportunities, high unemployment, low wages. Most of the students at Lees are white (96 percent), and poor (93 percent from families with less than $7500 annual income). Often, they are the first members of their families to go on to college. Almost 95 percent of Lees student body receives substantial sums of financial assistance.

As surely as the University of Detroit is affected by the auto industry, Lees is affected by coal and as the coal industry booms, students are hard to attract, preferring immediate rewards over long-range planning. Lees was originally conceived as a stepping-stone to a four-year institution. Programs in three liberal arts components are offered: social sciences, the humanities, and the natural sciences. Recently, however, Lees decided to introduce two-year terminal degree programs in a variety of technical fields. An associate degree for social welfare technicians is already being offered.

3.6.2 Program Development

Administrators at Lees Junior College were first introduced to the idea of cooperative education at a federally-sponsored program in the late 1960's. Together with Alice Lloyd College, they invited a director of a coop program at another college to speak at their schools.

Lees, Alice Lloyd and four other area colleges formed a consortium for the purpose of stretching limited funds to the greater benefit of all. They received their first federal grant in 1969 and Lees placed its first eight students in coop positions in the summer of 1970. A single director was engaged to oversee the program for all six schools.

The consortium was dissolved soon after its founding. However, Lees decided to continue the coop program itself.

Lees originally planned to make enrollment in the coop program mandatory for all its students. The goal of placing over 300 students in work positions quickly proved unattainable. Although some people complain that faculty were not supportive, it seems more important that few jobs were available in the hills surrounding the school and the inexperienced administrators of the program had difficulty arranging for out-of-state and even out of the area positions. But even more difficult was overcoming the attitudes of the students themselves and their families. Most Appalachian students don't like to go away from home. Administrators complain about students overcome by homesickness even though the college is only 30 miles away from home. Early coop directors often faced the frustration of lining up a job in some other area only to be unable to find anyone willing to go. In fact, the current director complains he has jobs even now he can't fill because they are outside the immediate area. In addition, in general, students rebelled against the idea of a mandatory program.

In FY 1970-71, 75 students were enrolled in the cooperative program; in FY 71-72, 80 students; in FY 72-73, 48 students; and in FY 73-75, 58 students. During the semester the interviews were conducted, 11 students were on cooperative assignments. The 80 cooperative students in FY 71-72 represented 23 percent of the total enrollment; 55, or 69 percent, were social welfare technology majors.

Today, coop is an optional program for liberal arts students. It is still mandatory, however, for students in career education programs such as social welfare technology.

3.6.3 Present Operation of the Program

According to the Lees' grant application to the Office of Education, the immediate objective of their coop program is "to provide off-campus experiences with industry, government agencies and service agencies that meet the special needs of students . . . in Appalachia." More specific objectives include: (1) to increase student motivation and therefore improve academic performance; (2) to increase student awareness of himself and his environment; (3) to provide career opportunities; (4) to encourage students to become "sensitive, socially-aware persons" through community service; (5) to allow students to earn money to pay for their education; (6) to keep curriculum responsive to students and society; (7) to attract students to Lees who have financial need or lack of motivation; (8) to decrease the drop-out rate; and (9) to enable the college to make an impact on the Appalachian region.

Students at Lees must be second semester freshmen to enroll in the cooperative program. Although original plans called for two semesters of work experiences for each student enrolled in the program, students usually work only one semester, that semester being in the summer between their freshman and sophomore years. If a student elects to work during the regular academic year, he faces the prospect of graduating at least one semester late, or even more if he cannot make up required courses during the meager summer program. And Lees students do not seem much different from students at other schools. They are as uncomfortable as anyone else with the idea of an extra semester in school. The 10 to 12 students who are enrolled in the program during the regular academic year are usually working part-time, 20-hours a week. From 30-35 students usually participate in the program during the summer.

Most of the jobs available to students are social service or government-related positions, although government positions seem to be getting more difficult to obtain. The biggest employer is ALCOR, Inc., an independent offshoot of a social service program originally founded by Alice Lloyd College. ALCOR contracts with Lees, Alice Lloyd, and the four other schools in the original coop consortium, to hire students each summer to help bring together the people in isolated mountain communities and state and county social services. Students also work with other community outreach programs, recreation programs and programs for the handicapped, as well as in small cottage industries. Previously plentiful teacher's aides positions have almost all disappeared. Many students work in college-sponsored programs, like the Oral History program, which seeks to record the oral history of Appalachia. The Oral History program has somehow got the image of a feminine program, however, and only women ever apply. Work for the men usually consists of maintaining the campus grounds and dormitories. Students working on campus are paid with work-study funds at a rate of $2 - $2.50 per hour. Half of a student's salary must be turned over to Lees to cover tuition costs.

Students who elect the alternate plan work as draftsmen, bookkeepers, and small parts assembly workers. They have also worked at various social work positions.

Employers are recruited most frequently through the mail and over the phone. The director seeks an oral or written commitment from the employer to make a position available for a cooperative student. After the position is filled, all arrangements are formalized in writing.

An attempt is made to find jobs "somewhat" related to a student's career goals, which are often still ill-defined among the 18 and 19 year old students. However, the objective of the coop program is not skills training but rather human relations training. It is an objective of greater importance in a school like Lees than in some other institutions because students at Lees are bright but not sophisticated. As late as six years ago, there was no road from Lexington to Jackson and many Lees students have never been exposed to individuals other than their family and the local storekeeper.

Students may or may not elect to receive credit for their work experiences. Most do not for two reasons: if they elect to receive credit they are required to pay $60 tuition for the semester; also coop credits have traditionally been unacceptable to four-year institutions although this situation is now changing. If a student elects to receive credit, appropriate faculty are enlisted to aid in grading.

According to the coop director and others, the coop student tends to be above average academically, serious and more mature than their fellow students.

The coop program is administered by a director and an assistant/ secretary. The director's salary of $10,500 yearly is comparable to faculty salaries.

3.6.4 Student Survey Findings

Problems encountered in conducting the questionnaire survey among the students and graduates of Lees Junior College and Alice Lloyd College were the same:

- Available records were poor at both colleges; when combined with the small student bodies at both schools a small sample resulted.
- A poor response rate netted a total of only eight responses among coop students and graduates at both schools; a similarly poor response was evident among non-cooperative students.

	Coop Student	Non Coop Student	Coop Graduate	Non Coop Graduate	Total
Questionnaires sent	19	100	21	50	190
Questionnaires returned	2	18	6	16	42

Because of these small values, conventional quantitative analysis is obviously inappropriate.

3.6.5 Employer Perspectives

The active employers of coop students from Lees Junior College interviewed were an economic development corporation, a media production company and a bank. Inactive employers interviewed were a research firm and a childrens home. The economic development corporation hires students only in the summer. The media production company currently employs nine students and the bank employs one student. The companies, active and inactive, have been coop employers for one to six years. The two inactive companies have employed one student and three students during their involvement with the program.

Three employers, two active and one inactive, said that the coop coordinator from Lees Junior College informed them of the availability of coop students and asked if they would hire them. These employers viewed the program as a source of low-cost, qualified manpower, as well as of future trained employees. One inactive employer said the regular employees, some of them former Lees Junior College students, informed him of the program and recommended that coop students be hired. One active employer doesn't remember how the company became involved in the coop program. All of the employers said they either have hired or would like to hire coop students after they graduate.

The three active employers plan to continue the program as long as they have openings. All said they plan to continue to employ approximately the same number of students in the same types of jobs. One inactive employer discontinued the program because business lagged and the students were no longer needed. The program would be resumed, however, if business increases in the future. The other inactive employer discontinued the program because of a bad experience with coop students. If the school agreed to a more thorough screening system and suitable students were found, this employer would again be willing to hire coop students.

All of the employers agreed that they prefer having students return to the same employer. The three active employers favored having the student work in various jobs within the same company to gain the best all-around experience. The inactive employers think the best experience and training is achieved by having the students stay with one job. They say this means less confusion and paperwork for the company.

Two active employers and one inactive employer said that alternate scheduling is best. The student can devote all his time to his job, be given greater responsibility, and therefore be exposed to a more complete work experience. Parallel scheduling is favored by the other two employers. They feel the student needs to share his work experience through classroom discussions with other students. Parallel scheduling allows the company to fill part-time positions with students. They also say it provides work for a greater number of students.

None of the employers connected with Lees receives financial compensation from the institution. Two of the active employers pay the students $85 a week. The other employers did not wish to reveal what they paid their students. The coop students work in various training positions, including general clerical and bookkeeping work, and with titles such as assistant media production person, banktellers, research assistants and assistant houseparents. The employers all said their students receive credit for their work experience.

Two of the companies, one active and one inactive, designate a coop coordinator to work with the coordinator from Lees Junior College in supervising and overseeing the program. Two other companies, one active and one inactive, do not. Lees screens all of their coop students to determine what positions they are qualified for before sending them for interviews. Each company briefly interviews the students and usually hires any student they are sent.

Two active employers feel that the students are good employees in all respects, but that their interest tends to lag near the end of work periods and absenteeism therefore increases. Two employers, one active and one inactive, expressed very positive attitudes about coop students. The students take their jobs seriously and offer a new perspective to the company, they said. One inactive employer had a very negative attitude. This employer had employed only one student, and his performance was dissatisfactory, he seemed to have no motivation, and he quit after one month. This employer predictably feels students are not properly screened by the coop coordinator.

None of the firms interviewed offers any sort of encouragement to their non-student employees to further their education. They agree it would be nice, but won't assist them in any way.

The majority of employers felt the coop program ran smoothly and needed no improvements. They saw only advantages to hiring coop students. Two recommended that the screening and interview process be more thorough and that students be familiarized with their job and duties before they are hired.

3.6.6 Perspectives on Program and Students

As the numbers cited previously indicate, few students can be enticed into enrolling in the coop program. The director of the program faces major hurdles in his recruiting efforts. The dearth of local jobs coupled with the students' unwillingness to go away from home has already been mentioned. But in addition, there's the matter of money. Almost all students at Lees receive some financial aid; many of them receive as much as $2500 a year, more than enough to cover all college-related expenses. The question is: why work? Financially, there is no reason, especially when the school demands half a coop student's earnings for tuition, an expense which can be easily paid with some other less strenuous form of aid. The director of the program describes the dilemma this way: "They work just enough so they can't receive financial aid, but not enough goes into their own pockets to make it worthwhile." The president of Lees acknowledges that one of the original goals of the program, to provide financial aid for economically disadvantaged students, is no longer appropriate. Most students at Lees work each summer; it is just that they don't enroll in the coop program.

The current coop director admits to being "cynical" about the aid situation. He feels students get the idea aid is "due" them and, therefore, they lack motivation. It is an attitude damaging not only to his but also to other programs, he concludes. Among students who must work and turn to the school for help in finding jobs, the work-study program is much more popular. Almost half of Lees almost 400 students are enrolled in the work-study program. Because of such a high population, some critics say students are poorly supervised and end up doing little of the work expected them. Under its auspices, the students need never worry about the prospects of a job away from home. Credit for the work-study experience is sometimes awarded by the coop program.

The students' lack of enthusiasm is matched among the faculty. Most of them carry heavy academic loads and do not greet the prospects of the additional responsibilities which might be attached to an expanded coop program with cheer. The director of the program complains the faculty do not inform students about cooperative education. The president of the college describes the faculty attitude as one of "nominal acceptance." The idea of a coop experience for faculty was floated but it was ill-received. Perhaps even more unenthusiastic about the program than students and faculty are the program administrators. Six directors have overseen the program in four years. Both the present director and several past directors who were interviewed describe the job as extremely frustrating, and many of them have obviously seen it as little more than a stepping-stone to something more gratifying.

Although the current director entertains great hopes for the program, he seems to feel sometimes overwhelmed by problems. In addition to the ones mentioned above, he also must contend with a feeling he has of being an outsider, i.e., one who was not born and raised in Appalachia, and of never quite being accepted. It is a problem he feels compounds his problems with an already unenthusiastic faculty.

3.6.7 Future

Despite the general disenchantment with coop education, the director of the program contends if "we can just hold on long enough," it could turn out to be an important and viable part of the college curriculum. As the large state network of schools in Kentucky has experimented with cooperative education, it has gained new respectability among faculty members. And the director believes students are changing under the influence of television and expanded educational opportunities. The president of Lees agrees that students are becoming more and more willing to relocate. Of more immediate importance is the college's recent thrust into technical education, a field traditionally associated with the coop philosophy. The coop director is deeply involved in the development of new technical programs, especially a program in electronics, and the idea of mandatory work experiences is being revived. Plans are being made for him and the Director of Institutional Development to approach prospective employers in technical fields together. The cooperative education director describes the potential of the program in this area as "unlimited," and the Director of Institutional Development agrees with him strongly.

A fledgling relationship with the National Alliance of Businessmen, which provides for the organization to pay the salary of a businessman on loan to Lees for teaching purposes, holds out the possibility of increased job opportunities for Lees students -- provided they can be persuaded to take them. A representative from IBM was on campus this year.

The director of the Oral History program has suggested sponsoring workshops for prospective employers so they may become acquainted with the school as well as the program.

The coop program enjoys the solid support of Lees' president who is determined to continue it with or without federal funds; although many others have doubts about his ability to do so.

3.7 Texas Southern University

3.7.1 General Background

Texas Southern University is a state-supported, coeducational institution, with both undergraduate and graduate components, founded in 1947. An historically black institution, TSU is situated in one of Houston's Model Cities Neighborhood target areas and about 70 percent of its almost 7200 students are from poverty-income families. About 35-40 percent receive financial aid.

TSU has an open admissions policy, accepting all applicants and providing special assistance when necessary to enable a student to acquire a GED in lieu of a high school diploma.

In June 1973, the Texas legislature designated TSU a "special purpose institution of higher education for Urban Programming." The university claims its broad special purpose to be: to apply its total educational resources to help solve immediate and future urban problems.

3.7.2 Program Development

TSU's School of Technology adopted a cooperative education program for a two-year experimental period in 1968. At that time, about 65 percent of their students were already working but few held jobs in any way relevant to their career goals. It was a program which had been previously attempted by the School of Business but it had failed. Several other smaller, less formal and less ambitious programs had also been tried prior to the 1968 experiment, including a cooperative arrangement negotiated between the university's mathematics department and the National Aeronautics and Space Administration (NASA).

In January 1969, the president of TSU appointed a committee to study the possibility of implementing the coop program on a university-wide scale. They recommended that a program be made available to all students in all academic areas in the 1969-70 school year, basing their recommendations on the following needs:

- the percentage of TSU students in need of income which would be earned through a cooperative education program is higher than at most schools with such programs;
- the environment and daily life of most TSU students is far removed from the mainstream of American society and cooperative education would provide much needed relevance to academic pursuits.

The first federal grant for cooperative education -- $47,000 -- was allocated to TSU in FY 1970-71. Since then over 200 students representing five Colleges and Schools and 21 academic disciplines have participated in the program, working in all parts of the country for 57 different employers, including 12 government agencies. Over 125,000 government dollars have been spent. (In the absence of a direct grant for cooperative education in 1972-73, the university allocated $20,000 of Title III funds to the program.)

3.7.3 Present Operation of the Program

Although different people use different words and assign varying degrees of importance to different goals, most people at TSU see the cooperative education program within the context of two major objectives: the more immediate objective of providing students with the financial assistance they require in order to finish school; and the long-range objective of facilitating their ultimate entry into the world of work, a world traditionally inhospitable to them as members of minority groups. A third objective occasionally mentioned is to enhance university/industry relations.

In its most formal sense, the coop program is a five-year package consisting of nine semesters on campus, four semesters at work and one semester on vacation. The first work period begins after a student has completed at least three but no more than four study periods. Three credits may be earned for each semester at work, although a student is not required to accept credit. In practice, various kinds of schedules have been utilized to meet the special needs of students, even though government regulations allow only students on the alternate schedule to be classified as coop students. Many students at TSU balk at the idea of leaving school for a semester. They -- and it seems their parents too -- see school as something to get through as quickly as possible. Other students -- especially those who are married -- are financially obligated to work continuously throughout their university career and cannot afford the luxury of a semester of classwork alone. Because of special efforts to meet the needs of these students -- including a special program with Lockheed enabling math and computer science majors to work three days a week and to attend classes three days a week -- the impact of the program cannot be evaluated by looking at the formal coop roles only.

The program is administered by a director, two assistants working half-time and 13 faculty liaison coordinators working quarter-time to maintain contact with students at work. Consultants are sometimes enlisted to recruit employers outside the Houston area. The director's salary at $14,500 is comparable to faculty salaries and the director enjoys faculty status.

About 75 percent of coop students are men; 25 percent are women. About 95 percent are black, five percent are Mexican-American. The breakdown by academic year of coop students in the fall, 1973, reflects the increasing participation in the program: two graduate students, 25 seniors, 30 juniors, 35 sophomores, and 38 freshmen.

Despite the fact that students representing 21 academic disciplines participate in the program, coop is still most commonly associated with the School of Technology -- probably both because of its origins there and the fact the program is housed in the Technology building. And, indeed, the largest percentage of participants are technical students. Technology students have been traditionally easiest to place.

The director of the program has made it his policy to select only the best, most qualified, students in order to preserve both the school's and the program's reputation. He also believes that by providing industry with only the brightest students, he will guarantee continued -- and hopefully increasing numbers of -- openings. He admits he has more openings than students to fill them now. His critics claim the program thereby serves only those students who do not really need help.

Students are recruited through a variety of means, both formal and informal. The director of the program speaks to graduating seniors in area high schools. He talks to all TSU freshmen during orientation and again to freshmen in individual classrooms. Radio and TV advertisements are utilized, along with posters, handbills, etc. People disagree widely on the effectiveness of the recruiting effort.

About 75 percent of the coop students work in the Houston area; 25 percent are scattered throughout the country. Naturally, students going out-of-town encounter special problems, both logistical problems like where to stay, where to eat, where to go for a good time, and financial problems. The financial aid office is often willing to advance students short-term loans at no interest to cover the initial expenses of settling elsewhere. Contact is maintained with students on the job through two letters sent to them from the coop office, one at the beginning of their assignments and one near the end. Each student should also be visited at least once by a faculty coordinator at the job site. Students often return to the same employers.

There are differing opinions about the financial rewards offered coop students. In 1974-75, students earned an average gross income of $600 a month. Arts and Sciences students earn the largest incomes, averaging $650 a month at the end of their work experience. Technology and Business students follow -- averaging $575 and $525 a month respectively at the end of their employment. Education students earn the least, averaging $400 a month.

Most coop students working locally do not receive financial aid, although it is now easier for coop students to qualify for aid than when the program was begun. Criteria which originally made it difficult to qualify have been relaxed. The financial aid office works closely with the coop office in determining need. On the other hand, most students working out-of-town do receive aid. The standard package of grants and loans is available. The director of the financial aid office seems favorably disposed to coop students because he himself worked his way through school.

Some of TSU's black students have encountered what appears to be prejudice on the job. One employer had to terminate one position, in fact, because the supervisor involved continuously gave students poor ratings which she could not justify. In another instance, a student brought a complaint against an employer with the Equal Employment Opportunity Commission, and the supervisor involved admitted she was wrong. According to the director of the program, black students often "freeze up" in all-white working situations, a reaction which promotes tense relations with fellow employees.

Faculty opposition to the program is centered in the School of Business, although other faculty also oppose the program. The coop director says some faculty are frightened that students with work experience will recognize teachers with out-of-date skills and they will be confronted with empty classrooms. The Dean of the School of Business complains about what he considers the program's lack of standards. A faculty member in Business says he is opposed to the program because business students have little trouble finding jobs after they graduate anyway and, therefore, have no need for the coop program. Other faculty members are opposed to the program because they say classes are arranged as a series of building blocks and students can't afford to step out of sequence.

3.7.4 Student Survey Findings

The analysis of data culled from the mail survey of Texas Southern University students and graduates is difficult for two reasons: no names were provided by the school of non-coop graduates and only a few names of coop graduates were available, and the rate of response was low. Student data will therefore be the only data tabulated and discussed.

	Coop Student	Non-Coop Student	Coop Graduate	Total
Questionnaires sent	70	100	8	178
Questionnaires returned	23	19	4	46

The racial/ethnic composition of the student respondents, both coop and non-coop, corresponds to the almost totally black composition of the student body as a whole.

Race	Coop Student	Non-Coop Student
Black	20	17
Mexican American	1	0
Oriental	1	0
Other	1	0
Total	23	17

Slightly more than half of the students in both categories come from homes in which parents have no college backgrounds. Although the sample is obviously too small to draw any significant conclusions, it is interesting to note that a slightly higher percentage of non-coop students report fathers with college experience than coop students (44 percent to 40 percent), and a substantially higher percentage of non-coop students report mothers with college experience (44 percent to 10 percent).

Father's Education	Coop Student	Non-Coop Student
Grammar school	5	2
Some high school	6	5
Completed high school	4	2
Some college	3	2
Completed college	2	1
Graduate work/degree	0	4
Total	20	16

Mother's Education	Coop Student	Non-Coop Student
Grammar school	4	3
Some high school	6	4
Completed high school	8	3
Some college	1	4
Completed college	0	2
Graduate work/degree	1	1
Total	20	17

More students report parents with annual incomes under $10,000, than with incomes over $10,000.

Parents' Income	Coop Student	Non-Coop Student
Less than $5,000	7	7
$ 5,000-$10,000	6	4
$10,000-$15,000	4	3
$15,000-$25,000	0	4
Over $25,000	0	0
Don't know	6	1
Total	23	19

The data regarding both parents' education and incomes reflect TSU's large percentage (70) of students from poverty-income families.

Both coop and non-coop students report similar average work weeks. Although the formal coop program follows the alternate plan, special provisions are made for students who must continue working to remain in school. The hefty work loads carried by non-coop students again reflects TSU's economically-disadvantaged constituency.

While Attending School Work Weeks	Coop Student	Non-Coop Student
Average hours/week	36	35
Total responding	23	14

Despite the similarity in the length of work weeks, coop students report earning higher weekly incomes. By computing the hourly rates of both groups of students, it can be seen how much more coop participants earn than non-participants per hour.

While Attending School Average Weekly Pay	Coop Student	Non-Coop Student
At the start	125	101
Most recently	145	124
Total responding	20	10

While Attending School Derived Hourly Rates	Coop Student	Non-Coop Student
At the start	$3.47	$2.80
Most recently	$4.03	$3.54
Total responding	20	10

Attitudes toward cooperative education are universally positive among participants.

Attitudes Re Coop	Coop Student
Very positive	14
Positive	9
Neutral	0
Negative	0
Don't know	0
Total	23

Furthermore, all four coop graduate respondents say they would participate in coop again if they were to do it all over. On the other hand, none of the four say they are holding the kind of job they want. Their average weekly salaries started at $182 and average $203 now.

3.7.5 Employer Perspectives

Three active employers of TSU's cooperative education students were interviewed as part of this study: two engineering firms and the Social Security Administration. Two inactive employers were also interviewed: an architectural firm and the U.S. Customs in Houston. One of the engineering firms employs three pairs of two students who alternate in positions. The other engineering firm has two students alternating in one position, and the Social Security Administration has one position in each of its Houston branches. The length of involvement of the three active employers ranges from three to six years. The architectural firm was involved in the program for two years, hiring two students; Customs was involved for four years, hiring seven students.

The two engineering firms start their student-employees as draftsmen. One firm said by the time they graduate, students are doing their own designing. Students in the Social Security Administration work as claims representatives.

Two of the firms initiated their involvement after they were contacted by TSU's coop coordinator. Customs, urged by the Civil Service

Regional Director, contacted TSU in search of qualified minority employees. An executive in one of the engineering firms knew TSU's first coop coordinator personally and the firm's involvement resulted from their friendship. The architectural firm was working on campus when they were approached and urged to become involved.

All of the active employers plan to continue hiring coop students. The architectural firm will not reactivate the program because TSU offers no degree program in architecture and they feel, therefore, that students, in general, are not qualified to work in their firm. Customs looks forward to reactivating their program when a freeze on hiring new employees is lifted. They are anxious for TSU's coop coordinator to contact them to smooth out previous problems.

Four of the employers, two active and two inactive, prefer the alternate system. One employer commented he thought students would be overburdened by trying to combine work and study. The continuity offered by the alternate plan is the most frequently mentioned argument in its favor. The Social Security Administration says it prefers neither the alternate nor the parallel plan.

Only the architectural firm thought it was better for students to be exposed to a number of different employers. All the other employers said they wanted students who would return to work for them again. Customs said that although they wanted students to return to them, they were willing to offer them positions in varying divisions.

These employers receive no financial assistance from the university for paying their coop students. Salaries for students working at both the Social Security Administration and at Customs depends on Civil Service ratings. Each time they return, they receive a higher Civil Service rating. The salaries currently offered coop students range from $6800 - $8500 annually. One engineering firm pays its coop students $545 when they begin. The firm is made aware of what other companies are offering by TSU's coop coordinator and they say they try to meet the top rate. The other engineering firm declined to discuss salaries, but did say they pay students rates comparable to their full-time peers. A "good" draftsman, they say, earns $800 - $900 a month. The architectural firm couldn't remember what they paid their coop students.

All of the firms agreed that once students were recommended to them by TSU's coop coordinator, they required no additional screening before hiring them. However, Customs said if they reactivate the coop program in the future, they will require a more careful interview with the prospective student employees before they hire them. The three active employers agreed they are only interested in accepting the student of quality that they have been accustomed to hiring from TSU. One engineering firm said if they hired anything less than excellent students it would mean they would have to hire additional supervisory personnel to train and specially watch over them.

All of the employers see their coop students as potential future, permanent employees. One engineering firm says it has hired about 50 percent of the coop students it has had in the last six years. The firm would hire more but they lose touch with students when they return to campus to complete their senior year. The other engineering firm says it particularly likes TSU's women students. The impetus to hiring former coop students is obviously the fact that they have already been trained in the peculiarities of the firms. The architectural firm couldn't hire TSU's coop students because they have no background in architecture, since TSU offers no program in architecture. Customs did not hire any coop students because Civil Service regulations made it difficult at one time. However, regulations have recently been amended to make it easier and Customs looks forward to one day hiring some of its coop students.

All employers except the architectural firm spoke very highly of their coop employees. The two engineering firms agreed that their coop employees are better workers than other part-time or summer student employees. Customs said that while some of its coop students did not perform well, they thought the customs were to blame since they had offered these students less than quality positions and it seemed natural that they should resent it. They said they plan to offer only positions in which there is a chance for advancement in the future. The architectural firm said it was difficult to fairly assess their students' job performance since they had no background in architecture.

All employers except the architectural firm seem enthusiastic about the concept of cooperative education in general. The Social Security Administration said they preferred coop to work-study. Typical comments on coop centered around the exposure it gives students to the world of work and the training it offers. One engineering firm said coop students tended to be more realistic in their expectations about their jobs after graduation. Customs said coop also promoted good relations between them and the university.

Only the two federal agencies said they had any program to encourage their permanent employees to further their education.

3.7.6 Perspectives on Program and Students

Students and faculty alike describe coop as an impetus to greater self-awareness, maturity and a deeper sense of responsibility. Students say they come back from their work experiences with a greater enthusiasm for classes and a clearer understanding of what courses they require. Grades seem to improve. Teachers say coop students tend to bring different attitudes and questions to their classes. One faculty member says coop students are better able to relate theory to practice. He also says their desire for upward mobility is more developed and refined than other students'.

The university has benefited, too, as a result of the coop program. An industry panel has been organized to take a look at TSU's curriculum periodically. Students also bring back ideas for curriculum change. A new masters program was added as a result of industry contact with the university, and a new B.S. in engineering technology is being developed. Individual classes have also been affected -- for example, the once heavily architectural context of TSU's drafting and design class was modified in favor of a greater emphasis on pipelines, systems and electrical wiring.

A few people interviewed also mentioned as a favorable aspect of the coop program the increased communications and sharing of information it has promoted as a result of its frequent contacts with offices like the financial aid office and the University Counseling Center. The coop program also works with the work-study program and the plethora of Model Cities projects conducted by the university. Special efforts are made to recruit students for the coop program from among those enrolled in Upward Bound, Potential Unlimited and the Special Services for Disadvantaged Students program.

3.7.7 Future

The coop program at TSU is currently in its fifth year of federal funding and so it faces the possibility of withdrawal of government support. Although the school seems committed to continuing the program, TSU's president says coop education would have to be phased out if no alternative source of support becomes available. A state-wide effort is now underway in Texas to get state monies for coop education and the director of TSU's program is actively involved in developing a coop curriculum which would meet anticipated state requirements if funding should be offered. One likely requirement -- that the coop working experience be offered for credit -- is already fulfilled at TSU. Other sources of income are also under consideration: special student fees, industry contributions and foundations support.

Apparently hopes for moving the program out of the School of Technology building will not be realized. Proposals for government funding mention plans for including it in a new Technology building. Other suggestions have therefore been advanced in order to guarantee wider participation -- including the scheduling of conferences, workshops or institutes to bring people together from various schools and colleges to talk about the program.

The possibility of mandatory coop for all TSU students has frequently been discussed. During the 1973-74 school year, the School of Technology initiated mandatory coop for all drafting and design and electronics students on an experimental basis. The School anticipates mandatory coop for all its students eventually. However, as long as the coop director and employers alike insist on only the best and most qualified applicants for the program, it seems impossible to initiate university-wide mandatory coop.

Other plans call for a computerized record-keeping system and more direct involvement for the program in urban problems, as part of the university's general commitment to extensive urban involvement. A major thrust is also anticipated to place students in city, county, state and federal-level government positions.

Other recommendations for future action include suggestions for: (1) more student participation in the program; (2) a fund through which industry could provide the university equipment, or money in order to buy equipment, that students could expect to encounter on the job; and (3) faculty involvement with industry during the summer months as a vehicle for opening up more opportunities for job placements.

3.8 Washington Technical Institute

3.8.1 General Background

Washington Technical Institute (WTI), an urban land-grant college located in the District of Columbia, was created by an Act of Congress in 1966. It admitted its first students in 1968. The goal of the Institute is to become a model inner-city technical school. A more specific objective is to place students in jobs offering good salaries and promising futures.

WTI offers about 30 degree programs and over 500 courses leading to Bachelor of Science degrees in agriculture and technical teacher training; and to Associate of Applied Sciences degrees in aerospace technology, allied health science, business technology, engineering technology, environmental science technology, and public administration. Special continuing education courses, and courses leading to one year diplomas, are also offered. Tuition and fees total $30 per quarter.

Anyone with a high school diploma, or a high school equivalency certificate, or anyone 18 years of age or older "who may benefit from the experience" is eligible for admission. Currently, about 4,300 students, all commuters, are enrolled, both on a full- and part-time basis, 60 percent of them attending classes during the day and 40 percent attending classes at night. Most are members of minority groups. The median age of students is 26; many are married and working full-time.

A long waiting list of applicants presently exists, and students may have to wait as long as two years -- in some cases, four years -- to be admitted.

It is expected that WTI will eventually become part of the proposed University of the District of Columbia, along with Federal City College and the D. C. Teachers College.

3. 8. 2 Program Development

Top administrators at WTI, especially its president, were early impressed with the cooperative education program at Northeastern University. And since it was a program which fit easily into the jobs orientation of the school, and seemed especially promising for the school's largely minority population, the establishment of a coop program was a high priority from the founding of the Institute. A student from Antioch College cooping in WTI's Financial Aid Office in 1968 and 1969 provided extra impetus for the introduction of a coop program. A consultant was hired to help with planning and a director was employed in 1970. Their combined efforts resulted in 13 students being placed on work assignments during the spring quarter, 1971. As of the fall quarter, 1973, about 300 students had begun at least one quarter of work. At first, coop was offered to students in business and engineering only because these students possess the kind of marketable skills which make early success possible. The coop program is now available to all students.

Employers were originally recruited through the school's advisory committees, panels of industry and government representatives attached to each of the major subdivisions of the Institute. Students were recruited with the aid of brochures, posters, and handbooks. The director of the program also spoke in classrooms after enlisting faculty support through the Faculty Association. Recruiting from high schools is not undertaken because of the long waiting list for admission to the school.

Original plans to have all full-time students participating in the coop program had to be abandoned because of the unique nature of the WTI student body. Many students are older than the average college student with families they support with full-time jobs. They attend the Institute to gain the knowledge and skills they will need to advance in a career they have already chosen and begun. They cannot afford, nor do they have the desire, to leave their jobs for the full-time commitment to studies which the alternative plan for cooperative education demands. In addition, about 10 percent of the student body is from foreign countries and no special provisions have been made to include them in the coop program.

Even a more modest goal of enlisting 25 percent of WTI's students in the coop program has not been met, a fact some people blame on a reluctant instructional staff, although most see it as a function of the high proportion of students already working in the student body. However, the implementation of a voluntary program in each of the school's major subdivisions has proceeded according to schedule, although response has varied depending on the special characteristics of each degree program and the related job market.

Faculty, administration, and the director of the program initially squabbled over whether coop jobs need be directly related to a student's major field of study. The issue has never been formally resolved although every effort is made to link jobs and studies. This is not always possible, however.

The coop program received $27,000 of Federal Title IV-D funds in fiscal year 1972-73, and $45,000 in 1973-74. They were awarded a $35,000 grant in 1974-75. WTI, in turn, contributes the time of certain administrative officers overseeing the program, the time of faculty associated with coop, and necessary space and equipment. They have also contributed limited sums of money.

3.8.3 Present Operation of the Program

About 100 WTI students are at work on coop assignments each quarter -- 60 percent are male, 40 percent female; about 25 percent are veterans. Almost all of them are associated with the departments of business, police science, engineering, public service, education technology and recreation. One hundred percent of the 250 coop students in 1972 were black.

WTI has adopted the alternate plan for cooperative education. Originally, students were to begin their first coop assignment after their second quarter at WTI. However, experience proved some students needed to complete three academic quarters before they were ready to work. Students complete two quarters working during the second, and final, year at the Institute. Two students, working alternate quarters, share one placement. When an opportunity exists for students to participate in a formal management training program which would last longer than one quarter, he may be permitted to work two consecutive quarters.

The alternate plan has a substantial body of critics at WTI. Because the typical WTI student is older than the average student elsewhere, he wants to complete his studies as fast as possible, the critics say. Participation in the coop program delays graduation for two quarters. They also argue that too many WTI students cannot afford to quit jobs they already have to concentrate on their studies during alternate quarters. They point out that even many coop students have to continue to work part-time during their quarters on campus. Some students already have jobs paying handsome salaries and the coop program can offer them nothing better. Scheduling problems also force coop students at work to take classes part-time. These critics advocate two reforms: substituting the parallel plan for the alternate plan and offering credit for relevant work experience already acquired.

In fact, the program has grown slowly. Only about 250 students participated in the program in 1973. In addition to the problems mentioned above, other problems have also hampered growth. Students in some fields are difficult to place, either because of union opposition, or because of special certification or licensing requirements, or because students from both WTI and other institutions fulfilling laboratory or field experience requirements provide all the paraprofessional labor required at no cost. The latter problem is especially applicable in fields like recreation and social welfare. Because of the minimal admissions requirements, many students drop out before their second year when coop is offered. Some department chairmen, who must recommend students for participation in the coop program, hesitate to recommend mediocre or poor students for fear of creating a bad reputation among employers for the program and the school.

Credit is not awarded for the coop experience, except in the departments of recreation, social welfare and public administration, where a total of nine credits may be earned for coop. The director of the program advocates extending credit for coop to all departments, but recommends a maximum of three credits because, he says, WTI students need all the "book learning" they can get. If credit is to be awarded, the director anticipates using faculty members to assist him in evaluating the performance of students on the job.

In addition to his responsibilities to the coop program, the director teaches courses in management, and so enjoys faculty status, a factor he considers important to gaining acceptance of the program from other faculty members. He feels some faculty initially feel threatened by coop because a student who performs poorly on the job reflects poorly on the teacher he had in class. He has tried taking faculty members to the job site as one way to acquaint them with the program. No organized opposition to coop, however, has ever surfaced, although skepticism continues.

The director reports to the Vice President of Academic Affairs.

All but two of the about 100 employers participating in the WTI program are located in the Washington D.C. area. Both of the other employers are in Boston, Massachusetts. Plans to extend placement to the New York City area and to other areas in New England have been formulated.

In general, the number of positions available is greater than the number of students willing and/or able to fill them, especially in business and engineering. Employers in Washington, as in other parts of the country, see the program as a means for recruiting future employees.

Students are visited once or twice during their quarter at work, either by the coop program staff or by faculty in instances where credit will be awarded. Employers are asked to fill out evaluation forms at the end of the student's employment period. The student is asked to write a report capsulizing his coop experience, a report the coop director views as a source of suggestions for program revisions.

The average salary for WTI's coop students is between $120 and $190 a week. No work-study funds have ever been utilized to pay student salaries. Employers have assumed full responsibility for this. During the 1972-73 school year, coop students as a group earned $550,000 - $650,000. Students, enticed by the pay, have dropped out of school to continue working. Whatever financial aid a student might be receiving is suspended while he is at work. About 33 percent of WTI's student body is receiving financial aid. The coop program is not viewed, in a formal sense, as part of the standard financial aid package; financial aid is a network of four grant programs and three loan programs. Although, of course, students must declare all income -- including income earned in the coop program -- when applying for aid. Coop education is, instead, viewed as a "service", along with academic advising, counseling, health services and career planning and placement.

The cooperative education program is administered by the director, an administrative assistant, and a secretary.

3.8.4 Student Survey Findings

The overall response rate to the mailed questionnaires was a disappointing 19 percent.

	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate	Total
Questionnaires sent	100	100	50	50	300
Questionnaires returned	16	29	6	6	57

Data on racial/ethnic composition, parents' educational experiences, and income reflect WTI's goal of becoming a model inner-city school, as well as its open admissions policy. The Institute's student body is almost totally black, as the response of students and graduates alike indicate; only two white students out of 57 were contacted. Although both were non-coop participants, given the small size of the sample, it is not significant.

Race	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Black	16	28	6	5
White	0	1	0	1
Total	16	29	6	6

Few of the respondents reported parents with college experience.

Father's Education	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Grammer school	2	8	2	3
Some high school	3	6	1	0
Completed high school	6	10	1	1
Some college	2	2	0	1
Completed college	1	1	1	1
Graduate work/ degree	1	1	0	0
Total	15	28	5	6

Mother's Education	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Grammar school	1	6	1	0
Some high school	4	8	0	1
Completed high school	7	9	2	3
Some college	2	4	1	0
Completed college	2	0	1	1
Graduate work/ degree	0	1	0	1
Total	16	28	5	6

Although only one respondent reported parents earning over $25,000 annually, it is interesting to note that, in every category, there were more respondents indicating incomes in what may be defined as a "middle" income bracket - $10,000 - $25,000 - than those reporting incomes in the lower brackets encompassing incomes under $10,000.

Parents' income	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Less than $5,000	2	4	1	0
$5,000 - $10,000	3	5	0	1
$10,000 - $15,000	1	5	1	1
$15,000 - $25,000	6	5	1	3
Over $25,000	0	0	0	1
Don't Know	3	8	0	0
Total	15	27	3	6

As a two-year institution, WTI expects its coop participants to complete two work experiences during their second year in school. Although the sample of coop graduates is obviously too small to draw any conclusions, the response indicates most graduates complete only one work assignment.

Number of Coop Jobs	Coop Graduates
0	1
1	11
2	2
3	2
4	0
Total	16

When queried about the length of average work weeks while enrolled at the Institute, interestingly, the highest average work week was reported by non-coop graduates, while coop and non-coop students report the same average work week. This probably reflects the high percentage of part-time students with full-time jobs attending WTI. The fact that coop students and graduates both report average work weeks under the 40 hours usually indicating full-time employment reflects the fact that many coop participants have to continue to work part-time during their quarters on campus.

Work Weeks While Attending School	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Average hours/week	$38	$38	$30	$40
Total responding	15	20	6	4

Non-coop students and graduates report higher weekly salaries for jobs held while enrolled in the Institute in every instance but one-the starting weekly salaries for non-coop students as compared to coop students which is virtually the same. This may also be influenced by the fact that many non-coop participants may, in fact, be part-time students with full-time jobs, perhaps even professional positions, which, in general, can be expected to pay at a higher rate than an intermittent job.

Average Weekly Pay While Attending School	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
At the start	$127	$126	$75	$108
Most recently	$121	$134	$84	$134
Total responding	14	20	6	4

Among WTI graduates, both coop and non-coop participants report similar average weekly salaries post-graduation. Again, this data need not refute coop's claim of getting its graduates higher starting and continuing salaries than they would normally receive. Especially when considering the exceedingly small sample, it is possible the coop grads are being compared here with older individuals with a long employment history, possibly in responsible positions, behind them.

Average Weekly Pay After Graduation	Coop Graduates	Non-Coop Graduates
At the start	$136	$138
Most recently	$157	$152
Total responding	4	4

Only half of the coop graduates, as compared to all of the non-coop graduates, reported being satisfied with their current job, although, again, the sample is too small to draw conclusions.

Job Satisfaction	Coop Graduate	Non-Coop Graduate
Yes	2	3
Total responding	4	3

Attitudes of coop participants to the coop program are overwhelmingly positive; neutral and negative attitudes appear only among non-coop participants although the majority of even these respondents with feelings about coop report positive feelings.

Attitudes Re Coop	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Very positive	11	2	3	1
Positive	5	5	3	1
Neutral	0	1	0	1
Negative	0	2	0	0
Very negative	0	0	0	0
Don't know	0	0	0	2
Total	16	5	6	5

The majority, but not all, of both coop and non-coop graduates, reported they would elect to enter the coop program if they were to enroll in the Institute again.

Would You Become Involved Again?	Coop Graduate	Non-Coop Graduate
Yes	4	3
Total responding	5	5

3.8.5 Employer Perspectives

Interviews were completed with representatives of six employers of WTI students in the Washington, D. C. area. On the payrolls of the three active employers are an estimated total of fourteen coop students. The other three employers employ no coop students at this time.

Three employers, two active and one inactive, also participate in the coop programs of at least one other school. Seventeen students from twelve colleges, other than WTI, are on coop at this time with two of these three employers.

The active employers are an elementary school, a retail food chain, and an agency of the federal government; the inactive employers are an architectural firm, a computer and hardware manufacturer, and an agency of the federal government. Both active and inactive employers have been involved in the program for about two years. The inactive employers blamed the state of the economy as the reason for their curtailed involvement in the program.

Five of the six employers initially contacted WTI themselves regarding participation in its cooperative education program. Both governmental agencies and the school sought students to meet shortages of qualified workers. In another case, the contact was prompted by the fact that the company's vice president was on WTI's Board of Directors. The fifth employer initiated contact on direction from its home office. In all instances except one, participation was viewed as a vehicle for screening and eventually hiring experienced graduates for the permanent work force. The exception was the small architectural firm which can not hire graduates of two-year schools. This firm was also the only employer that was recruited for the program by WTI's coop coordinator.

All of the employers anticipate future involvement in WTI's coop program. When the economy improves, the inactive employers indicated they would welcome the return of coop students. The majority indicated they would like to increase the number of students placed. At present, two of the active employers have together twenty vacant positions they feel coop students could fill.

Every employer expressed a preference for having the coop student stay with the same employer for the duration of his schooling. The employers felt they had an investment in the coop students they employ, in the sense they are looking forward to the day when they can hire a permanent employee with knowledge of the company. Employers believe that it takes longer than one term for anyone to learn how a company functions.

Parallel scheduling was preferred by four employers for several reasons. They felt work and school can be more meaningful if the activities are simultaneous. For two of these four employers, the parallel plan best fits the operating schedule of the company. Only one employer preferred alternate scheduling on the grounds that it permitted students a necessary break between school and work. He felt that when both activities are undertaken at once, both receive insufficient attention. The sixth employer stated no preference because experience with both plans has been positive.

In one company union membership was mandatory; in two companies, coop students were eligible for, but not required to join, the union.

All employers had assigned an individual in personnel or training the responsibility for coordinating the coop program. One employer has a national coordinator for coop education.

No employer received money from the school to help pay the salaries of coop students. Coop students work both part and full-time, with weekly hours ranging from fifteen to forty. Their job titles include classroom aide, cashier, produce clerk, police officer (security guard), architectural technician, and coop student in business and computer operations. Wages range from $2.25 per hour for some architectural technicians to $4.85 per hour for produce clerks and cashiers. For each successive term with the same employer, a hike in pay is offered.

All of the active employers think that academic credit is awarded for the coop experience, while all of the inactive employers stated that they did not know if it was or not. There was no consensus as to whether credit should be awarded. Four of the employers (including all inactive ones) felt credit was not necessary. They asked why a student should receive both pay and credit for working.

WTI's coop coordinator screens students for the various positions available. It is the understanding of the employer that only the "cream of the crop" will be recommended by the coordinator for interviews.

All employers expected applicants to have high grades. For half of the employers, interviews with the students are rather lengthy, focusing on communication skills and composure under pressure.

Employers anticipate that some coop students will do well and others will not. In general, though, when coop students are contrasted with other student employees, the employers felt they tend(1) to be better disciplined; (2) to perform better given their training and capabilities; (3) to stay with the firm longer; (4) to do better on the job because of the double incentive of pay and credit; and (5) to be better motivated after graduation.

The advantages of coop for the employer are perceived to be greater than the disadvantages. After graduation, coop students are already trained for entry into permanent career positions. Consequently, coop is less costly than other recruiting techniques. Coop can be disadvantageous for the employer when a student on the parallel plan cannot juggle the simultaneous demands of work and school. In such cases, his performance at work, as well as at school, may be below par.

Half of the employers have tuition-assistance programs for non-coop employees who are pursuing degrees and certificates in areas related to their jobs. All employers encourage employees to complete as much formal education as possible.

Employers' suggestions for program improvements were employer-specific. One employer felt that more contact is needed between WTI and the firm. Workshops were suggested to promote discussions about the varying expectations of employers, students and schools. The retail business employer complained area colleges, in general, deemphasized retail business in favor of courses dealing with large-scale manufacturing. Employers governed by civil service regulations suggest loosening regulations to allow the hiring of coop graduates at a higher Civil Service rating then they had as students. The representative from the architectural firm suggests that expectations concerning the performance level of coop students enrolled at two-year schools are so high they induce frustration.

3.8.6 Perspectives on Program and Students

Students tend to speak as highly of their coop experiences during interviews as they indicated they felt about the program on questionnaires. Several students said they decided to seek a bachelors degree as a result of their coop assignments. All of the students interviewed could single out some things they learned as a result of coop.

WTI administration and faculty see coop as a means of opening previously closed doors for their largely minority population. The director of the program sees coop as a way to break the poverty cycle. He anticipates jobs paying $11,000-$12,000 annually for his coop students, although none of the coop graduates responding to the questionnaires indicated current salaries that high.

The coop program has also affected WTI's still developing curriculum. As an institution dedicated to turning out employable graduates, WTI is particularly intent on reflecting the needs of Washington area employers. In the business management department, a new money and banking program was developed; in the engineering department, a new program in production management was developed.

3.8.7 Future

WTI's coop education program is still developing. It enjoys the solid support of the school's president and other top administrators and, although no firm commitments have been made, will probably continue after federal funding is no longer available. The director describes it as a "must" program. The academic dean foresees the possibility of eventually structuring curriculum design around the needs of the coop program. Now, he considers the program - unfortunately - to be little more than "tacked on" to a system sometimes unresponsive to its demands.

The program is seriously understaffed, according to many observers, although probably not any more understaffed than most offices on this developing campus.

One of the goals for the future is obviously to enroll more students in the program, although many people insist coop cannot hope to be beneficial to all students. Some people anticipate increased coop enrollment to follow the gradual lowering of the median age of students, as is expected to happen. The director of the program is also seeking more faculty involvement. He has circulated a memo requesting suggestions from faculty on how to improve the coop design. He would like to see one faculty member assigned to the coop program from each department. This would be one way to relieve the heavy administrative burden from the director's shoulders.

The director of the program would also like to inaugurate a kind of pre-coop program during the student's first year at WTI, in an attempt to lower the high dropout rate. He is especially concerned with high-risk students. Again, he hopes for increased faculty involvement to make this possible. He suggests some faculty be assigned a "case load" of high-risk students in exchange for a reduced teaching load. With additional federal funds, he would hire additional counselors to perform a similar task.

Because of high support for the idea, credit will undoubtedly be offered in the future for participation in the coop program. The issue of credit is inevitably entangled with the twin issues of academic standards and what constitutes a legitimate academic experience.

Faculty support - probably dependent on a guarantee of participation in the grading process - is crucial.

The problem of the extra two terms required for the coop experience must also be resolved if increased student participation is to be gained.

The academic dean is enthusiastic about the idea of industry representatives teaching on the WTI campus.

Students who have participated in coop made many recommendations for improving the program during interviews. Most frequently mentioned was the recommendation for increased and more visible recruitment among students. Also frequently mentioned was the desire for more visits from coop staff or faculty while they are at work.

4.0 COOPERATIVE EDUCATION PARTICIPATION AND PERCEPTIONS

The study design called for site visits to eight cooperative education schools, as well as a mail survey of cooperative education students and graduates and non-cooperative education students and graduates of these eight schools, and a telephone survey of cooperative education employers. Information from site visit student, program staff, and faculty interviews and mail survey and employer survey results involving all eight sample schools have been aggregated to provide a broad picture of cooperative education students and the effects, values, and difficulties of program participation.

As previously stated, the eight schools included in this study are diverse in many factors, and they do not constitute a statistically representative sample of the universe of cooperative education programs. Thus the data presented in this section do not necessarily reflect the universe of cooperative education students or schools. However, the aggregated data do provide for some tentative exploration and analysis of students and program effects.

4.1 Mail Survey Results

The mail survey included a sample of 614 completed instruments from the four respondent categories at each of the eight sample schools.

Noteworthy results of the mail survey are presented below.

4.1.1 Student Backgrounds

Background information from survey respondents suggests that greater differences exist between present students and graduates than between cooperative education participants (past and present) and non-participants. This situation is especially marked with respect to the racial/ethnic composition of the respondent groups.

Race	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Black	52(26%)	61(29%)	13(13%)	7(8%)
White	124(63%)	130(61%)	78(80%)	68(82%)
Chicano	6(3%)	3(1%)	0(0%)	1(1%)
Puerto Rican	2(1%)	3(1%)	3(3%)	2(2%)
Oriental	7(4%)	7(3%)	4(4%)	2(2%)
American Indian	0(0%)	1(1%)	0(0%)	2(2%)
Other	6(3%)	8(4%)	0(0%)	1(1%)
Total	197	213	98	83

As the table shows, black representation is much higher among present students -- coop and non-coop ed -- than among graduates, regardless of participation in cooperative education. Blacks are 13 percent of cooperative education graduates surveyed and eight percent of non-cooperative education graduates; they constitute 26 percent of present cooperative education students and 29 percent of non-coop students. Differences are not found for other racial groups.

The following table shows educational attainment of parents:

	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Father's Education				
Grammar school	31(16%)	46(22%)	10(10%)	18(22%)
Some high school	31(16%)	30(14%)	18(19%)	11(13%)
Completed high school	51(27%)	57(27%)	24(25%)	17(21%)
Some college	37(19%)	28(13%)	23(24%)	14(17%)
College graduate	23(12%)	23(11%)	13(14%)	13(16%)
Graduate school	18(9%)	26(12%)	8(8%)	9(11%)
Total	191	210	96	82
Mother's Education				
Grammar school	25(13%)	29(14%)	12(12%)	12(14%)
Some high school	31(16%)	38(18%)	13(13%)	9(11%)
Completed high school	73(38%)	57(27%)	34(35%)	32(38%)
Some college	31(16%)	47(22%)	16(16%)	17(20%)
College graduate	21(11%)	26(12%)	15(16%)	10(12%)
Graduate school	12(6%)	15(7%)	7(7%)	4(5%)
Total	193	212	97	84

As the table shows, there is no clear difference between cooperative education participants (past and present) and non-coop participants. Coop students least often (33 percent) report mother's college attendance, but differences are not large. Both coop and non-coop graduates report higher percentages of college attendance by fathers than do present students, coop and non-coop.

Parental income reflects a pattern similar to the previous characteristics; differences between graduates and present students are greater than variations between coop and non-coop participants.

Parents' Income	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Less than $5,000	24(13%)	38(17%)	7(8%)	9(11%)
$ 5,000- 9,999	30(16%)	37(17%)	8(9%)	13(16%)
$10,000-14,999	42(22%)	42(19%)	28(30%)	18(22%)
$15,000-24,999	48(25%)	47(22%)	25(27%)	18(22%)
$25,000 or higher	17(9%)	24(11%)	11(12%)	14(17%)
Total	190	219	92	83

Today's students are slightly more likely to report parents' incomes under $10,000 than graduates. (It is also interesting to note that it is the non-coop participants, among both the students and graduates, that report these low incomes more frequently.) Conversely, graduates are more likely to report parents' incomes over $10,000

In summary, background factors analysis indicates that for these eight schools, today's students are more likely than graduates to be:

- Black;
- From lower-income families;
- Children of parents without a college education.

Some of these differences -- in the direction of greater representation among students than among graduates of groups historically less likely to attend college -- may be due to differential attrition. It is possible that students from poor, less educated, and minority homes are less likely than other students to graduate. It is also plausible to believe that more children from lower income and lower socio-economic status families and from minority groups are now entering college.

The one personal variable which most strongly differentiates cooperative education participants (past and present) from non-participants is sex; most coop ed participants are male.

Sex	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Male	158(79%)	117(55%)	81(82%)	44(52%)
Female	41(21%)	97(45%)	18(18%)	40(48%)
Total	199	214	99	84

The presumed basis for the male dominance of the cooperative education groups is that the bulk of coop ed participants continue to be drawn from traditionally male-dominated disciplines (e.g., engineering, business).

4.1.2 School Experience

Students and graduates of coop ed programs were asked about their experiences in the program.

The majority of respondents reported entering the eight sample schools as freshmen.

	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Freshman	143(75%)	138(62%)	64(65%)	65(77%)
Other years	47(25%)	84(38%)	34(38%)	19(23%)
Total	190	222	98	84

The majors selected by the respondents reflect the historical emphasis of cooperative education programs for engineering students.

	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Engineering	106(54%)	17(8%)	54(55%)	3(4%)
Accounting and Business	24(12%)	28(13%)	13(13%)	13(16%)
Architecture	11(6%)	11(5%)	2(2%)	2(2%)
Other Technical/Vocational	29(15%)	60(29%)	10(10%)	22(27%)
Education	2(1%)	19(9%)	1(1%)	9(11%)
Liberal and Fine Arts	24(12%)	74(35%)	19(20%)	33(40%)
Total	196	209	99	82

Other coop students can be found widely scattered throughout a number of other disciplines (fine arts to mortuary science). The sample of non-coop participants is, by contrast, weighted in favor of liberal and fine arts majors.

Coop ed graduates were asked how many coop job placements they had had at school. As the table shows, half the graduates reported two or more jobs.

Number of Coop Jobs	Coop Graduate
0	2(2%)
1	47(48%)
2	23(24%)
3	15(16%)
4 or more	10(10%)
Total	97

A small proportion (two percent) of graduates enrolled in coop programs never actually held a coop job.

The reported coop work experiences of past and present program participants are varied. As would be expected, coop ed participants report working higher average hours per week than non-coop participants who worked while in school.

Work Weeks While Attending School	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Average hours worked/week	39	30	36	25
Total responding	168	132	94	53

Since coop participants worked more hours per week, their higher earnings might be expected; however, they also had higher average rates of pay. Program participants earned more per week at both their first and most recent college work periods.

Average Weekly Pay While Attending School	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
At the start	$144	$ 94	$113	$61
Most recently	$158	$112	$132	$74
At the start	3.69	3.17	3.14	2.44
Most recently	4.05	3.73	3.67	2.96

Clearly, two phenomena of interest are operative here:

- Coop participants are paid at a higher rate than their non-coop colleagues;
- Graduates were paid less per hour than are today's students.

The second finding can undoubtably be attributed to inflation.

Those surveyed were asked how they viewed cooperative education. Their attitudes toward cooperative education, expressed by participants and non-participants alike, are primarily positive, and coop participants approach unanimity (91 percent for students, 89 percent for graduates) in their positive appraisals.

Attitude Re Coop	Coop Student	Non-Coop Student	Coop Graduate	Non-Coop Graduate
Very positive	109(55%)	20(20%)	56(57%)	14(28%)
Positive	72(36%)	44(43%)	31(32%)	16(31%)
Neutral or negative	17(9%)	38(37%)	11(11%)	21(41%)
Total	198	102	98	51

When graduates were asked if they would participate in cooperative education were they to start college again, coop graduates responded very favorably with a large majority agreeing they would participate if they had the decision to make again.

Would You Become Involved Again?	Coop Graduate	Non-Coop Graduate
Yes	82(93%)	23(52%)
No	6(7%)	21(48%)
Total	88	44

4.1.3 Experience Following Graduation

Graduates, both former cooperative education participants and non-participants, were questioned about their experiences since graduation. The two groups do not differ markedly with respect to their propensity for graduate study; slightly more than a quarter of each group report advanced study.

Graduate Study	Coop Graduate	Non-Coop Graduate
Yes	28(29%)	21(27%)
No	69(71%)	58(77%)
Total	97	79

The mean starting weekly incomes for the two groups at jobs following graduation differ significantly, with cooperative education graduates reporting higher incomes.

Average Weekly Pay After Graduation	Coop Graduate	Non-Coop Graduate
At the start	$179	$125
Total responding	76	58

Moreover, the initial mean difference ($54/week) in income reported by the two groups is maintained, as shown in a comparison of the income reported "now" by both groups.

Current Income	Coop Graduate	Non-Coop Graduate
Average weekly pay	$248	$189
Total responding	77	58

While this difference suggests the beneficial effect of cooperative education on salaries and jobs, it is not possible to establish a cause and effect relationship, given a data base which will not support the kind of multivariate analysis required to determine the relative effects of various factors. It is known, however, that a large proportion of cooperative education students were engineering majors, while non-coop majors often were liberal arts majors; engineering graduates traditionally have relatively high salaries immediately after graduation and maintain this advantage for some years.

In spite of data base limitations, it is possible to further analyze the data to consider the relationship between years since graduation and income. Two approaches were used:

- Graduates were stratified with respect to year of graduation and their mean incomes computed;
- A linear regression function was computed to determine income with respect to time since graduation.

The results of stratification by year of graduation are shown below, for both groups of graduates.

Year of Graduation	Mean Weekly Income Coop Graduate	Non-Coop Graduate
1974	$165(16)	$137(15)
1973	$231(25)	$166(13)
1972	$282(9)	$211(10)
1971	$225(2)	$194(8)
1970	$345(11)	$234(3)
1969	$294(10)	$268(6)
Before 1969	$234(4)	$262(3)

For every year except "before 1969," the coop ed graduates report higher incomes than non-coop ed graduates; the opposite relationship may be due to older respondents in the non-coop ed sample or to a removal of the advantage of cooperative education after some years of job experience. Overall, except for 1970 graduates, the differences are not as great here as reported in the previous aggregate table. Numbers of respondents in each category are small, so results should be viewed with some caution.

A clearer, though less detailed, picture emerges from the linear regression analysis. Predicting weekly income as a linear function of years out of college indicates a substantial difference in starting salaries with a minor difference in the rate at which salaries increase over time.* This suggests that cooperative education may provide a "head start" to new graduates, with financial benefits diminishing over time as other graduates gain substantial work experience themselves.

Both graduate groups were asked whether they like their job. Response differences were small, with 64 percent of cooperative education graduates and 58 percent of other graduates responding affirmatively.

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*The regression equations predicting weekly income using years since graduation are as follows:
Coop Graduates: $Y=177+29$ (year out of school) $+ e: r=.34$
Non-Coop Graduates: $Y=129+24$ (years out of school) $+ e: r=.62$
It is interesting to note that the "fit" to the linear model is markedly greater in the case of the Coop graduates ($r^2 = .38$) than for the Non-Coop graduates ($r^2 = .12$).

4.2 Student Opinions About Cooperative Education

During the site visits, present cooperative education students were asked their views of the program. The respondents represent various academic fields -- for example, engineering, accounting and business, computer, biology and marine science. The students were varied in years of schooling as well as in need for financial assistance.

Coop jobs for these students were similarly varied -- from government employment, computer programming and accounting in private industry, surveying with construction firms, to gas station attendant and janitor jobs.

Virtually all the students have positive opinions of the program, regardless of the career relevance of their coop jobs. Benefits cited by the students included experience in earning and budgeting money, learning human relations skills, making career choices, acknowledging academic training needs, learning to appreciate the world of work, and testing independence. One woman reported learning to adjust to a traditionally male occupation. Engineering and accounting students were particularly enthusiastic about the coop experience and reported higher motivation to learn after returning from the work experience. Work also has helped these students to focus on more efficient use of their time while at school and to identify skill areas needed for future careers.

Many students reported being asked to return to the companies as permanent employees after graduation.

Many students reported that their initial reason for seeking coop employment was financial. These students were primarily interested in obtaining money to help meet their educational expenses. Their involvement with their jobs came second.

Some students in the general work coop programs said that cooperative education is simply a way to get credit for work they have to do anyway, in order to support themselves. Program participation was thought to be an easy way to earn credit.

Many students prefer jobs close to home and feel the expenses and problems of resettling in a distant community offset the benefits of such employment. Problems of housing, friends and finding one's way around the community overburden the student and detract from his work efforts. One student suggested that students be sent out in pairs for out-of-town work. Another, a veteran majoring in accounting, suggested the school prepare a handbook to guide the student to available housing, restaurants and entertainment in other communities. A female engineering student expressed her desire to have the university send announcements of campus activities to her when she is away.

A problem mentioned time and again by students was their desire for varied job situations and employers. They feel the system does not easily permit this flexibility. They said coop staff have pressured them to return to the same companies for additional coop assignments even when they had been minimally satisfied with their first experience there.

Students generally heard about the coop education program through friends involved with the program. They feel more students would benefit from the program if more publicity was utilized to attract them. Other suggestions made by the students for improvements in the program include that more efforts be made to attract employers; that student's needs be communicated to the employers especially the needs of those working far from campus. Students also feel that more counseling, and more evaluatory follow-up are needed.

Most students view cooperative education not just as a way of earning money, but an opportunity for career exploration and experience. They are concerned about making sure the job assignment and academic experiences are complementary.

4.3 Faculty Opinions About Cooperative Education

Faculty interviewed during the site visits included both individuals participating in the coop program and others who were not involved. Among those faculty participating in the coop program, some had been involved with the administration of the program at an earlier time, while others were currently involved with counseling students, recruiting employers, and following up on evaluation of student work performance. Many academic fields were represented among the faculty interviewed including liberal arts, fine arts, history, English, business and accounting, and various engineering fields. Some of the faculty had new appointments at the schools, while others had been there for as many as 21 years.

Faculty opinions regarding cooperative education appeared mixed, with those in liberal arts more skeptical of the purported benefits of the program. One instructor in speech and drama reported that the coop experience was primarily service-oriented, and expressed the wish that the experience could be more career-oriented. Some liberal arts faculty indicated they would support a program that placed students in work situations which would help them develop marketable skills not usually learned as part of classroom activities. These faculty believed that it was the employer's responsibility to provide human relations and related training within the work setting --

students should not be expected to enter the work setting with highly developed skills in this area.

The question of the relevance of the coop experience was frequently raised. Faculty often believed that students should be placed on coop jobs that were directly related to their career goals, but there was doubt as to the extent to which this ideal situation was being realized. Faculty in both liberal arts and business expressed concern for female coop students. Jobs for women students are usually in traditionally female occupations -- secretarial, retailing and social work -- and faculty felt that although top management supported expanded opportunities for women, middle management remained Locked in tradition.

An engineering professor pointed to the local and national economic cycles as influencing both the quality and quantity of coop jobs. In poor times, he feels fortunate to place students in any job, and feels that even a "bad" job can teach the student. Relations with employers was also cited as an area of concern, especially in bad economic times when students could not be removed from "bad" jobs because of fear of alienating the employer.

The chairman of an accounting department reported that students often opt for less than relevant coop jobs because of the low salaries of career-related jobs. This can be a critical factor for students of institutions charging high tuition. A student needing to earn his educational expenses cannot afford the luxury of indulging his personal preference in a coop job. This is particularly true of jobs which employers feel constitute training for the student, rather than valuable work output for the employer.

Faculty teaching courses in engineering responded especially favorably to the coop program. They feel that the engineering student is given a chance to develop professional maturity through the experience. In addition, the social implications of a career become clear through the coop experience permitting the student a chance to define his career goals.

All faculty agreed that the coop student showed a new maturity, increased personal growth, greater security about employment prospects, and increased interest and inquiry in the classroom. In addition the student in technical areas benefits from exposure to current changes in a rapidly advancing technological field of study. Parenthetically, one electrical engineering professor feels that faculty also benefit from the program by keeping abreast of recent developments.

Faculty mentioned program problems in several areas. One criticism was along the following lines: in many schools only the "best and brightest" students are accepted and placed, and faculty believed that cooperative education, though of benefit, did not significantly increase vocational opportunities for these students since they would get good jobs anyway. Yet employers were perceived (probably correctly) as unwilling to hire the average student, who perhaps can gain the most from the coop experience. This problem of qualifications for coop students has further ramifications. A poor student may sour the employer and he may refuse to employ others from the school. However, exceptions were noted. One instructor in psychology mentioned placing two students with below C averages. One worked out well, and the other didn't. One political science faculty member expressed the feeling that a student without an outstanding academic record might do well in a relevant work stituation. Such a student might be disillusioned with the classroom situation, and exposure to work experience could motivate the student to return to the classroom with renewed motivation.

All faculty who discussed the issue of coop employment opportunities expressed a desire for a wider geographical base. Too frequently, the jobs were those in neighboring communities. In areas of poor economic growth, these jobs tended not to be career-oriented. An electrical engineering professor felt the need for more employers on a nationwide basis. On the other hand, an instructor in psychology at a rural college believed students were reluctant to coop outside the state, particularly the women students. Living expenses in a distant city would add increased economic burdens to the student already struggling to pay for an education.

The issue of responsibility for developing evaluation criteria and for actual grading was cited by nearly all faculty interviewed. Criteria or procedures for awarding credit frequently were not vested in the departments. This was seen as a threat to maintaining high standards of quality education. In schools where the coop coordinator was responsible for criteria and grading, the criticism centered around the coordinator's background and qualifications: he was either (1) a generalist and therefore lacking in the knowledge necessary for evaluation of technical work, or (2) a specialist in a particular area in which he was competent at evaluation, and therefore lacking the knowledge necessary to evaluate properly in any other area.

One system in a primarily engineering school was perceived by the faculty interviewed as satisfactory. Inputs from three sources are used in fixing the student's grade:

1. The job supervisor writes a report/evaluation of the student's performance/progress.
2. The coop advisor in the University's Office of Cooperative Education and Placement interviews the student and writes a report.
3. The instructor in a co-op course evaluates the student's performance and cooperation in class.

The evaluation by the job supervisor makes up 50 percent of the student's grade. Inputs from the coop advisor and the course instructor each account for 25 percent of the grade.

Some faculty members in voluntary programs remarked that cooperative education could become something of a burden, depending on the degree of faculty involvement expected. If teachers were expected not only to teach classes and to evaluate student job performance, but also to counsel students, visit them on jobs, become involved with employers, etc. -- without any extra time or compensation -- then they felt faculty would have little incentive to participate in or support cooperative education programs. A professor of engineering suggested that coop activities for faculty center on the campus -- not off. "Visiting with employers would be nice, but economically and time-wise, this is difficult to arrange. It's hard to teach classes and make trips at the same time." One merchandising educator, however, enjoys the opportunity to go shopping and visit with her coop students. In a school where teachers are assigned students to supervise according to geographical location, a former coop instructor raised doubts about her ability to supervise students in an unrelated field. She feels incapable of being a "true counselor" to students outside her specialty area.

Faculty were thus mixed in their evaluations of cooperative education, and concerned with both administrative and academic issues. Moreover, from their perspective as teachers, they were specifically concerned with assuring that coop experiences were relevant to the student's course of study.

4.4 Staff Opinions About Cooperative Education

Cooperative education directors, as well as assistant directors and teacher/coordinators where they existed, were interviewed at the eight schools.

As might be expected, most of the directors and assistants were enthusiastic about the programs they ran, supporting the philosophy governing the various aspects of their programs, e.g., alternate or parallel plans, consecutive or differing employers, etc. Only one assistant director and one teacher/coordinator, both employed in the same program, expressed generally negative feelings about their program. Reflecting the differing vantage points of their respective positions, the assistant director was most critical about program administration -- criticizing the lack of clearly articulated goals, staff training sessions and regular meetings for the exchange of ideas, etc. -- while the teacher/coordinator complained about the lack of relevance of coop positions to the student's field of study.

One director, although very enthusiastic about the concept of cooperative education, described his position as "frustrating" due to problems peculiar to the school.

All coop ed program staff members interviewed had at least an undergraduate degree and most had done some graduate work. Educational backgrounds spanned business, engineering, education, and counseling; four directors had a degree in business.

All coop staff persons agreed that faculty support was crucial to a successful coop program, and most felt that their own academic backgrounds and various areas of expertise were crucial to obtaining that support. Also important in obtaining faculty support was the director's status. Two of the directors hold faculty status, although the fact that other directors do not does not necessarily mean that their institutions consider them less qualified. Several directors are clearly too busy administering large, multi-faceted programs to assume faculty responsibilities. The high status of several other directors is indicated by income comparable to that paid to faculty and by positions they hold on college or university governing boards or policy-making committees. Lack of faculty status was a major concern to only one director, who saw it as the major stumbling block to obtaining credit for students for a pre-coop course he was offering.

Good faculty support was also seen as a function of how the coop program was initially introduced in the school, whether by the faculty themselves or by administrative edict. Finally, coop staff members saw faculty support as a function of where their program was lodged in the administrative structure of the college or university -- whether in one particular school or department, in which case faculty support from other schools and departments might be limited ; in a student affairs or services - type office, a position again which might dictate poor faculty support ; or in academic affairs, which seems to hold the best promise for faculty support.

Three of the directors interviewed saw faculty as basically supporting their program; two saw faculty as basically in opposition; and three felt the faculty had varying opinions.

Maintaining good relations not only with faculty, but also with students, administrators, and employers, was seen as one of the major responsibilities of the coop staff. The other most frequently mentioned responsibility was counseling students. Which was considered more important differed from school to school.

The biggest problem facing the directors of established programs emphasizing participation by engineering and other technical fields is apparently the paucity of students compared to jobs. Directors dealing predominantly with liberal arts and other non-technical students have the opposite problem. The lack of available teaching positions or positions as teacher aides is a frequently mentioned cause for problems in placing liberal arts majors. One director in a predominantly liberal arts school complained he had too many jobs and not enough students, but he attributed this seemingly unusual situation to the fact that his students do not want to work outside the area immediately surrounding the school, and most of the jobs he has located are out-of-state.

Other problems mentioned include: placing mediocre or "C" students, finding relevant positions especially for liberal arts majors, and handling situations unique to individual employers and students.

Three directors strongly support the idea of having students stay with the same employer throughout their coop experience; two others discourage this practice. Only one director said he does not counsel students one way or another; at one school this is not an issue as students are enrolled in the program almost always only after they have lined up their own jobs.

Directors in programs aimed primarily at students in technical fields tended to support the idea of a relevant work experience; directors in programs aimed at a large liberal arts population tended to support the idea of "human relations" training.

Coop staff were, in general, enthusiastic about the alternate plan except, predictably, in the one school operating according to the parallel plan.

4.5 Employer Opinions About Cooperative Education

Employers of coop students at the eight schools were questioned in a telephone survey about their experience with the coop program. These employers represent a broad spectrum of job fields in both the private and the public sectors, including retailing, manufacturing, real estate, banking, mental health institutions, engineering and architectural firms, as well as government agencies. These employers also represent a wide range of experience with the coop program at their affiliate schools -- from very recent involvement to a working relationship of several years. Personnel representatives of the company were most often the individuals contacted for views on the coop program.

All the respondents expressed very favorable opinions about the programs and the student participants. The students were lauded for their work attitudes -- they were reported to be highly motivated, enthusiastic and conscientious workers. Moreover, the employers believed their companies benefited from participation in the program, since students could receive training to meet a company's particular needs, and a pool of available labor was created.

Hiring students full-time upon graduation appears to be the intention of many of the employers. One employer of engineering students hires approximately half of its coop students after graduation.

Perhaps partially for this reason, employers uniformly expressed their desire to retain the same student throughout their coop experience. They feel that continuity benefits the company -- the training provided the student would be wasted if the student were to jump from firm to firm. Further, the investment in training and supervision of the coop student is typically not returned until after the student's second work experience.

Job titles given to the coop students indicate a wide variety of duties. Some titles are: cashier, sales clerk, architectural technician, produce clerk, police officer, engineering aide, draftsman, designer, teacher's aide, attendant nurse, bank teller, research assistant, and assistant house parent. Salaries, likewise, range widely. A lumber company employs a coop student as a sales clerk for $2.45 an hour. An architectural firm pays students between $2.25 and $2.50 an hour. A beginning salary for coop engineering students cited by one firm was $545 a month (approximately $3.15 per hour) with subsequent raises each time the student returns. Coop draftsmen at another firm earn $800 to $900 a month (about $4.60 to $5.15 per hour). Employers of social science students, primarily government agencies, cite salaries at grade GS-3 or $6,774 per year (about $3.25 per hour), which means the coop student is hired below the usual starting level of GS-4.

Employers believe they pay students adequately and according to the market price for the job. Some employers help meet students' financial needs in other areas. A government agency paid for students' books. Health insurance and other company benefits, including seniority, may accrue to the co-op students.

Employer responses on whether they preferred the alternate or parallel schedule for cooperative education varied. Engineering firms favor the alternate schedule. They feel that students could not attend adequately to school and job at the same time. The engineering and hard science curricula are considered too demanding for the student. Employers in other areas -- business, social sciences and government -- were mixed in their responses. Some feel that the student could combine work and studies; others believe the two are not compatible.

Screening students apparently becomes a perfunctory ritual for employers after they have participated in the coop program. Virtually all the employers interviewed reported that if a good relationship with past coop students and the school coop coordinator has been experienced, the firm generally needs only the school's recommendation of a student and a personal interview which serves primarily to match the student's skills with the postition. Coop students, once on the job, are usually evaluated in the same manner as other company employees -- through periodic formal evaluations.

Employers generally expressed interest only in "superior" students. Employers in technical fields feel they could not justify hiring less than outstanding students because the benefits to the company would not be worth the costs of training and supervision.

As far as foreseeable future plans for employing coop students, employer responses were mixed. The economic downturn has diminished the supply of available jobs in companies engaged in fields of architecture and manufacturing and in government agencies. One engineering firm, however, predicted strong demands for draftsmen until 1980.

It appears, then, that employers view cooperative education as a valuable way of identifying and training future employees. Thus they are interested in continuing employment of the same students, and not in providing career exploration opportunities for many different students on a single-assignment basis. This perspective is very different from that of students and faculty, but reflects the realistic priorities of employers.

5.0 FINDINGS AND IMPLICATIONS

This study of cooperative education was designed as an overview concerned with identifying and analyzing program goals and operations, and providing an initial understanding needed prior to initiation of formal evaluation of cooperative education programs. While it made no attempt to use a generalizable sample of the several hundred schools operating cooperative education programs, the study did provide a "picture" of cooperative education in eight diverse programs, and led to the identification and initial analyses of program goals, priorities, and key issues. Major findings and their implications are discussed below.

5.1 Defining Cooperative Education

Site visits to eight cooperative education schools, combined with a survey of present and former students, review of Office of Education files data, and a literature search, established that there is no single, universally accepted operational definition of cooperative education. As a general concept, cooperative education involves combining classroom studies and work experience as part of a post-secondary education program. However, the nature of the interface between studies and work, the relative importance of the two, and the policies and procedures governing the integrated program vary widely, and no single accepted "model" or series of models exists.

The National Committee for Cooperative Education in 1971 provided a definition which attempted to include general standards for cooperative education programs. According to this definition,

- Classroom experience and practical work experience must be "integrated",
- Work experience is a "regular and essential element in the educational process, "
- Both a "minimum amount" of work experience and "minimum standards of successful performance" during work assignments are to be degree requirements.

Even such a general definition as this still seems too narrow as it might exclude programs such as Pasadena's which involve work assignments totally unrelated to areas of study. The legislation authorizing federal funding for cooperative education programs, sets just one specific program requirement. Title IV-D of the Higher Education Act specifies that federal assistance be provided for carrying out cooperative education programs which "alternate periods of full-time academic study with periods of full-time public or private employment." Thus the federal definition clearly would seem to exclude the "parallel" coop ed program -- involving part-time study and part-time work assignments -- from grant eligibility.

The literature includes many cooperative education program models and program descriptions. Like the present study, however, it demonstrates that *individual programs use different operational definitions to guide their development and implementation of cooperative education programs.* There appears to be no universal unifying or guiding principle, beyond that of somehow meshing classroom and work experience.

The lack of a single operational definition or organizing principles for cooperative education is not necessarily a program weakness. It is quite possible that cooperative education can be most effective when individualized programs are developed by schools based on their unique philosophies and environments, particular student body characteristics, and varying courses of study. However, the extreme variations among interpretations of the purposes and components of cooperative education programs do complicate both program development and federal oversight of schools receiving program grants. Specifically:

- Since the components and operations of individual programs should be consistent with their individual interpretations of what cooperative education should be and do, it becomes extremely important for school personnel to clearly define their program philosophy and operational foundation and assure that their planning efforts lead to a program which conforms to their program definition. Otherwise, goal attainment may be very difficult.

- Since different programs may be operating under very different program definitions, they are likely to have very different specific goals as well. Thus it is important that these goals be clearly defined by the program to guide their program and permit self-assessment, and that the federal government be able to evaluate each program according to its own goals.

- If the federal government is to encourage the development of cooperative education programs which have the greatest promise of success, it becomes extremely important to be able to determine which kinds of programs -- based on what kinds of operational definitions -- seem most successful, and to offer guidance to schools to help them build upon such success. This may mean a series of guidelines or program development recommendations based on different program definitions; it may mean performance standards consistent with different program models.

5.2 Cooperative Education Program Goals

Like operational definitions, program goals in cooperative education vary widely in nature and emphasis. Among the stated or implied goals identified among the programs studied are the following:

1. To provide students opportunities for career exploration within a general field to aid in career selection;
2. To provide students with technical skills and experience through specific career-related coop job assignments;

3. To provide students an introduction to the work world and some practical "human relations" skill training, to better prepare them for eventual permanent employment;

4. To help to break career barriers for women and minority groups, through coop assignments;

5. To provide students from low-income families the opportunity to help pay for their postsecondary education through work assignments, thus making college financially feasible for such students;

6. To provide a means for schools -- particularly relatively costly private schools -- to offset tuition differentials and thereby compete for students with less expensive schools nearby by offering their students a way of meeting such extra costs through work assignments.

The first three goals relate specifically to different kinds of career preparation for students. However, similar goals can be stated from an employer's viewpoint. For example, the first three goals might be interpreted as helping to assure employers a work force of individuals who are better trained (Goal #2), more satisfied (Goal #1), and better able to cope with human requirements on the job (Goal #3). Goals #4 and #5 have an equal opportunity emphasis, and Goals #5 and #6 involve the financing of postsecondary education. The last goal might be considered to involve institutional survival rather than educational concerns.

The study indicates that these goals are far from mutually exclusive; indeed, most schools espouse several of them. Particularly for schools with relatively new cooperative education programs, financing considerations may have been of primary importance in the decision to initiate a program. However, schools have academic goals as well for their cooperative education efforts.

The multiplicity of goals is not in itself a problem, so long as programs recognize the operational implications of their goals. However, some of the frequently adopted cooperative education program goals are at least partially conflicting when espoused by the same program, and may lead to program confusion or inconsistency. For example:

- If students are to receive "human relations" training and introduction to the world of work, the direct relevance of the work assignment to the student's academic course of study is not of key importance. However, career exploration goals require that work assignments be at least in the broad field in which the student is considering employment. A school with both goals must differentiate between them for different students, determine the relative priority of each goal, or make other arrangements to assure that one goal is not met at the expense of the other.

- Emphasis on career exploration generally implies letting a student "try" several different kinds of coop assignments. However, if a program wants to provide students with technical skills and experience, it will generally encourage them to return to the same job for multiple periods since it takes time to learn enough to take on technical responsibilities for an employer. Programs holding both goals face a dilemma, unless clear procedures exist for differentiation for different students. Moreover, while technical skills are most often a concern for students in engineering and other relatively technical fields, and career exploration is a particular concern of many liberal arts students, there are apparently many technical students who would like to try several kinds of job assignments. Thus policies based on student majors may not be adequate to meet student needs.

- Where financial considerations are of key importance, it may be difficult for a school to meet other goals with relation to relevance of the work assignment to academic studies. The institution will find it difficult to refuse good-paying coop jobs which offer little opportunity for career exploration, for example.

These are just a few of the potential inconsistencies among program goals identified in the study. Site visits indicate that some schools do not fully understand the programmatic implications of their goals, set workable priorities among them, recognize the potential for conflicts, and take steps to resolve them on some rational basis.

These goals are of importance to the Office of Education, since it provides funds to operate programs with varying and sometimes inconsistent goals. More study is needed of the actual goals of present cooperative education programs and their effects on program operations in order to:

- Establish which goals are realistic under specified conditions,
- Determine frequent inconsistencies among program goals, and take steps to help programs recognize and resolve these inconsistencies, and
- Be able to identify individual program goals in order to carry out objective program evaluations based on these goals.

5.[illegible] Differing Perspectives on Cooperative Education

Information from this study indicates that one major issue provides perhaps the greatest single challenge to schools attempting to establish and run successful cooperative education programs. This key issue is the necessity for balancing the differing and sometimes conflicting goals and priorities of the various participants in cooperative education programs: students, institutional staff and faculty, and employers. Different groups may adopt different goals or interpret them differently, and their priorities typically reflect their own perspectives.

Some of the key perceptions and implications of these different groups are as follows:

- Faculty are concerned with protecting the "quality" of the degree in their field of study, and of assuring that cooperative education is relevant to the academic course of study. They may be extremely skeptical of coop jobs which are not directly career-related, and some may not be convinced that the concept of cooperative education is appropriate to their field. Faculty often question whether and under what conditions academic credit towards graduation should be awarded for co-op experience. Some faculty believe the academic departments should be responsible for such decisions; others may find oversight responsibilities for coop students burdensome. Technical field faculty may prefer students' repeated coop assignment to the same employer as offering the best opportunity for on-the-job learning. Liberal arts faculty may believe career exploration to be theoretically desirable, while questioning the desirability of brief and possibly superficial experiences in many different assignments.

- Employers, particularly those private sector employers hiring personnel in technical fields, often are looking for future permanent employees among coop students. They may be concerned with assuring that individuals assigned to them develop enough skills and experience to be valuable employees, and believe that the first assignment is largely a learning experience for the student. They thus favor having the same student return to them each work period throughout his or her coop program participation. Human service agencies which serve as coop assignments are more likely to use students as a valuable temporary staff, particularly where their funding limitations or the lack of available personnel mean serious manpower deficiencies. However, they too are likely to favor having the same students return for repeated assignments, since a "trained" student is especially valuable.

- Students may view coop experience in many ways: as a chance for career exploration, a means of helping to finance a college education, a way of finding a future employer and thus avoiding a job search after graduation, a chance to see what the world of work is like and gain "human relations" skills for future use, an easy way to get academic credit, or a combination of these. Depending upon their priorities, they may favor or oppose repeated assignment to the same job, coop jobs far from campus, assignments which pay well but are only peripherally related to their academic course of study, very demanding work assignments, or requirements for relating their coop job to their field through a paper or other assignment.

- Cooperative education staff must attempt to balance faculty, student, and employer desires and needs, and to reconcile them with Federal requirements and the stated policies and priorities of the institution. They must satisfy employers if they are to maintain needed coop openings. Faculty support is essential if credit is to be provided and maintained. Student demands must be sufficiently satisfied to assure participation at full program capacity. Moreover, coop program coordinators are typically held responsible for operating a program which is "successful" based on the school's goals and objectives, and "efficient" in terms of staff time and other costs.

If an individual school's cooperative education program is to be "successful" in the sense of meeting its own goals, then there must be some general agreement not only as to what these goals are, but also, as to the program's priorities. Given the different viewpoints of the various participant groups, the institution must review and assess conflicting concerns and priorities and make rational decisions which are then followed in program planning and operations. Programs can be assisted in this process if they can receive from the Federal government:

- Guidance in terms of any Federal preferences or requirements which will affect goals or priorities,
- Assistance in identifying probable areas of conflict based on the experience of other programs,
- Help in identifying alternative policies, procedures, and conflict-resolution approaches, matched to specific goals and objectives, through manuals or recommendations which build upon the experience of other programs.

5.4 Major Programmatic Issues

A cooperative education program's goals and priorities help shape its structure, policies, and procedures. Based on information from this study, it appears that -- whatever the specific goals and priorities agreed upon -- cooperative education programs must make decisions concerning certain key issues. Decisions on these issues, which are closely interrelated and which themselves are strongly affected by basic goal decisions, have major implications for the structure, components, and impacts of a cooperative education program. They include the following:

- Determination of what academic majors or courses of study are to be included within the program. Programs may be limited to students in particular technical or vocational fields, or include liberal arts and fine arts majors. The "coverage" of a program in turn determines what kinds of cooperative jobs must be identified and for what periods; student-job matching and other policies and procedures must be developed to be appropriate for students with different major fields and therefore different coop needs.

- Determination of the relative emphasis on career exploration versus gaining of specific technical job experience. The former emphasis implies assigning students to different jobs each coop period, which in turn affects the types of jobs to be sought, and employer willingness to participate. The latter implies assigning the same students to the same jobs for repeated periods. Where students from technical fields are involved, repeated assignment to the same job -- or at least the same employer -- may seem desirable, although students in such fields may themselves prefer some variety within their field for career exploration. Where liberal arts students are involved, there is generally greater emphasis on different job assignments to permit exploration within a broad field; however, some relatively demanding -- and interesting -- coop jobs may require repeated assignment of the same students. Decisions can be made on an individual basis, but the school must make some policy determinations in order to develop a job pool appropriately balanced to meet the demand.

- Determination of the importance of pay scales for coop jobs. Where coop jobs must provide students with the money to pay tuition and other costs during periods of classroom study, then pay scales may be more important than career relevance; a coop program which espouses career exploration and technical preparation goals may have to compromise them to meet student financial needs. Where students are less likely to depend upon their coop pay for financing their education, then the quality of the work experience can be of primary concern. Any program must determine how to balance these often conflicting concerns in ways which satisfy student, faculty, and institutional goals.

- Determination of the policies and procedures surrounding the awarding of academic credit for coop experience. Each program must determine under what conditions academic credit will be awarded for coop experience; credit issues include (1) whether credit will be given; (2) whether credit will count towards graduation or towards major field requirements; (3) whether coop credits are transferable to other majors or other schools; and (4) whether grades are to be given, and if so, using what performance standards. There is a need to provide some rational and reasonably objective means of evaluating student job performance and determining its "value" in terms of credits, particularly where students may wish to transfer such credits -- as frequently occurs in junior colleges, for example. The responsibility for credit evaluation and award must be determined; often it is shared by the coop program office and various academic departments or the academic affairs office. The school must consider the implications of having credit determinations made by other than faculty members, particularly in terms of faculty support for the program; yet having faculty make such determinations can prove costly in personnel time and raise other difficulties.

- Setting student selection criteria. Coop programs have been accused of serving as "dumping grounds" for poorly qualified students and of "creaming" the best students within a school or department. Each school must determine its eligibility requirements, in terms of grades and other factors. Some schools have found that academically mediocre students perform well on the job and return from a work period with renewed interest in classroom work; others fear negative employer reaction -- including the loss of a job site -- if "chances" are taken on students. Each school must determine the extent to which it will use flexible or rigid screening requirements. Where the schools have a reputation for thorough screening, some employers will accept anyone referred, without any screening of their own. This is particularly desirable where job sites are located far from the campus, but may lead to "screening out" students unnecessarily.

- Determination of program schedules. Title IV-D of the Higher Education Act requires alternate periods of full-time employment and full-time classroom work for Federally funded programs; however, some programs do operate on the parallel schedule, with part-time classes and part-time jobs. Programs with Federal grants must make sure Office of Education and legislative requirements are met. Other scheduling concerns must be considered, including whether co-op participation is to be mandatory or elective. Schools with mandatory programs can make particularly efficient use of their facilities by being able to predict the number of students on and off campus at any given time, and making double use of dormitories, classrooms, and other facilities. However, other factors may affect this decision. Some schools have mandatory programs which involve no work assignments during the student's first year or more, for example.

- Establishment of administrative responsibility and procedures. Responsibility for managing a co-op education program must be established within the school, and the specific program roles of the cooperative education program director, other program staff, and participating faculty determined. The "housing" of the program within the institutional structure seems to be of considerable importance particularly in obtaining faculty support; if the program is in the academic affairs office or similar unit, it seems to be viewed especially positively. Where faculty are directly involved in identification of coop job slots, oversight of students, evaluation for credit, etc., academic support for the program may be strengthened. However, some schools may find that faculty lack the time for such responsibilities, and that some of these program activities can more efficiently be carried out by program staff.

- Determination of whether tuition is to be charged for coop work assignments. Where academic credit is given for coop job experience, the process of oversight and evaluation requires staff and often faculty expense. Thus schools often feel justified in charging student tuition fees for coop work assignments. However, particularly where students need their coop earnings to finance their classroom work, they may resent this cost, and prefer instead to obtain their own jobs without credit. Where less than full academic credit is given for coop work experience, tuition charges may seem unjustified.

These are some of the key programmatic issues identified by the study. They are important in that every program faces these and related decisions; if appropriate decisions are not made during program planning phases, then problems may arise when programs become operational. Moreover, these decision areas also reflect some of the key program analysis issues for any future cooperative education program evaluation.

Guidance from the Office of Education -- in the form of summaries of the key issues and suggestions for alternative decisions based on the experiences of other programs -- may help schools in the program development stages to carry out effective, comprehensive program planning and development, thereby avoiding operational difficulties or conflicts.

5.5 Indicators of Program Success

An evaluation of cooperative education programs requires the identification of specific indicators of program success against which programs can be measured. This study has found that different cooperative education programs have very different program goals and priorities. It therefore appears that indicators of program success must be identified based on these different goals and priorities rather than on any universal cooperative education program model. However, it seems likely that a more comprehensive analysis of cooperative education programs -- involving a systematic examination of a much larger sample of the several hundred programs currently operating in schools throughout the country -- could lead to the development of a series of cooperative education models. These models, each with its own goals and priorities, could provide a basis for the development of definitive and widely applicable indicators of program success; moreover, the number of models should be sufficiently small to make this effort feasible.

The present study has led to the development of some possible indicators of cooperative education program success, each related to one or more specific program goals. They include the following:

- Where career exploration is a goal:

  - .. The program has provided students with at least three different kinds of cooperative jobs reflecting different careers within the student's broad field of interest.

  - .. The student is permitted to decide for himself whether to return for a second coop period to the same job.

  - .. The school has a policy of identifying, and has successfully identified, coop job slots reflecting different careers within each participating study area.

- Where technical skills and experience are a goal:

  - .. Students have the opportunity to return to the same coop employer for similar or progressively more demanding assignments each work period.

  - .. Coop jobs are directly related to student career fields and involve specific technical skills or experience.

  - .. Faculty consider coop assignments sufficiently career-related to deserve academic credit towards graduation in the student's major field.

- Where human relations training and an introduction to the work world are a goal:

  - .. Coop jobs are available which do not demand previous job experience or advanced skills.

  - .. Employers with certain coop jobs provide specific supervision and formal or informal training in "human relations" as applied to the work situation.

  - .. The school has a pool of coop jobs which are used only for first-time coop assignments.

- Where breaking down barriers to female and minority group employment is a goal:
  - The school reports, and students and staff collaborate, that a policy is made of sending women and minority students to employers and to jobs in career areas where traditional barriers to their employment exist.
  - The school has a large proportion of female and minority group cooperative education students, relative to their proportions in its total student body and in participating major departments.
  - Women and minority graduates of the coop education program report permanent employment by employers and in career fields with traditional barriers against women and minorities.
- Where financial help for students from low-income families is a goal:
  - The school has a pool of relatively high-paying, low-expense jobs which have been developed (and which are held) for students for whom finances are of primary importance.
  - Average student earnings from coop jobs are sufficient to cover -- or contribute significantly to -- tuition and other fees.
  - Students report that coop participation has made it possible for them to remain in school.
- Where offsetting tuition differentials is a goal:
  - Average student earnings from coop jobs are equivalent to or greater than the tuition differentials between the coop school and identified public colleges in the same area.

.. Students report that participation in the cooperative education program has made it possible for them to attend this school instead of another less expensive institution.

.. The school does not charge tuition fees for cooperative education work assignments.

These represent the kinds of indicators which can be used to evaluate cooperative education programs, based on their individual goals. However, since most programs have several different goals which must be reconciled, indicators for any individual program must reflect its specific goals and priorities.

5.6 Summary of Study Implications

The present study has provided for the identification of a series of cooperative education program goals and approaches, and for the identification and initial analysis of key issues in the development and operation of cooperative education programs. The study therefore has:

- Provided insights into the nature of cooperative education program goals, with emphasis upon the extent to which such goals vary across programs, are realistic, and are consistent. Areas of conflict among goals have been suggested.
- Identified possible areas of conflict and compromise based on the differing definitions of cooperative education and the differing program perceptions of the various participant groups: students, faculty, staff, and employers.
- Suggested program issues which must be considered in any program analysis or evaluation.

- Developed sample indicators of program success and indicated additional study required to establish more definitive indicators and use them for the evaluation of cooperative education programs.

In summary, this study has provided insights and understanding of cooperative education, based on eight case studies, telephone and mail surveys, and the review of considerable secondary data. While the information obtained is not generalizable to the universe of cooperative education programs nationwide, it does specify:

- Key factors which must be considered in a broader study,
- The kinds of preliminary analysis required in the development of an evaluation of cooperative education programs, and
- Areas in which the Office of Education could provide guidance and assistance to cooperative education schools, whether during the initial planning and implementation or the ongoing operation of their cooperative education programs, thereby strengthening these programs.